

# **Card-Image Public Access Catalogues (CIPACs)**

## **A Critical Consideration of a Cost-Effective Alternative to Full Retrospective Catalogue Conversion**

**by**

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## **Abstract**

This dissertation investigates card-image public access catalogues (CIPACs) – online library catalogues based on databases of digitized catalogue cards and more or less sophisticated mechanisms for browsing or searching. Solutions of this kind have been implemented by a number of libraries in various countries since the mid-1990s, mainly as inexpensive alternatives to a full retrospective conversion of their old catalogues. The general aim of the study is to build up an informed view of this area, by looking at the present spreading of CIPACs, their characteristics and navigational features, the problems and issues interconnected with their creation and implementation, and the awareness, behaviour and opinions of CIPAC users. In order to achieve these goals, several approaches were used. First, a comprehensive survey of existing CIPACs and their characteristics was undertaken; this also included the implementation and updating of an international CIPAC web-page. Second, the main issues in CIPAC creation and implementation were identified and discussed, based both on the relevant project literature and the answers of 23 libraries to a short unstructured questionnaire. Third, a web-based qualitative survey of 320 users of eleven CIPACs in four countries was conducted. The study shows that the CIPAC approach has to offer much to libraries that cannot afford to convert their large old catalogues as fast as they might wish. However, the absence of sophisticated search options, the problems that users often have with the interfaces offered for navigation, and the features of a past and mostly outdated generation of reference tools that these computerized card catalogues inherently carry suggest that they are at best acceptable as short or medium-term, but not as permanent alternatives to "real" OPACs.

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## List of abbreviations

ASCII	American Standard Code for Information Interchange
BLPES	British Library of Political & Economic Science (LSE)
b/w	black and white
CD-ROM	Compact Disk – Read Only Memory
CGI	Common Gateway Interface
CIPAC	Card-Image Public Access Catalogue
CLQ	CIPAC Library Questionnaire
DOBI	Dokumentationsdienst Bibliothekswesen
dpi	dots per inch
DVD	Digital Versatile Disk
ERIC	Educational Resources Information Center
FTE	Full-Time Equivalent
FUB	Freie Universität Berlin Library
GB	GigaByte
GIF	Graphics Interchange Format
g/s	greyscaled
HTML	HyperText Markup Language
httpd	HyperText Transport Protocol daemon
h/w	handwritten
IHS	University of Innsbruck, Theological Faculty Library
IT	Information Technology
JPEG	Joint Photographic Experts Group
KB	KiloByte
LSE	London School of Economics
LIS	Library and Information Science/Studies/Services
LISA	Library and Information Science Abstracts
MAB	Maschinelles Austauschformat für Bibliotheken (machine-readable exchange format for libraries)
MARC	Machine-Readable Cataloging [format]
MB	MegaByte
MZK	Moravian Library
n/a	not applicable
NKP	National Library of the Czech Republic
ONB	Austrian National Library (Österreichische Nationalbibliothek)
OPAC	Online Public Access Catalogue
PI	Prussian Instructions

PNG	Portable Network Graphics
pnm	Portable anymap
RAK	Regeln für die alphabetische Katalogisierung (Rules for Alphabetical Cataloging)
SCSI	Small Computer System Interface
SPSS	Statistical Package for the Social Sciences
SUB	Berne City and University Library (Stadt- und Universitätsbibliothek Bern)
TIFF	Tag Image File Format
UBH	Heidelberg University Library (Universitätsbibliothek Heidelberg)
UBTUW	Vienna University of Technology Library (Universitätsbibliothek der Technischen Universität Wien)
UBW	University of Vienna Library (Universitätsbibliothek Wien)
UDC	Universal Decimal Classification
ULB	Saxony-Anhalt University and State Library (Universitäts- und Landesbibliothek Sachsen-Anhalt)
UNIMARC	Universal Machine-Readable Cataloging [format]
URL	Uniform Resource Locator
VAT	Value Added Tax
VGA	Video Graphics Array
WUW	Vienna University of Economics and Business Administration Library (Universitätsbibliothek der Wirtschaftsuniversität Wien)
www	World Wide Web
ZLB	Berlin Central and Regional Library (Zentral- und Landesbibliothek Berlin)

# 1 Introduction

## 1.1 Background

Since the introduction of automated library systems and of online public access catalogues (OPACS) in particular, one of the greatest challenges for library managers has been the transfer of older records into the online catalogues, particularly of records that were created before the advent of computing. Although some lucky libraries have already achieved this goal, many others are still far away from closing their old card, sheaf or book catalogues. In the mid-1990s it was estimated that in the UK approximately 50 million records (28 million in higher education libraries) were still remaining to be converted (Bryant, Chapman & Naylor, 1995; Bryant, 1997), and 52 million records (of titles published after 1945) in Germany (Beyersdorff, 1993).

It is important to note that retrospective *conversion* (or "retroconversion") is not the same as retrospective *cataloguing* (or recataloguing). Whereas the latter refers to the original cataloguing of library material, the former simply means the transformation of already existing manual records into machine readable form (Hills, 1993, p. 47–48; Chapman, 1996, p. 16). Although many librarians would prefer recataloguing, i.e. to create "perfect" records in full conformity with present cataloguing rules, in most conversion projects pragmatic reasons such as time and cost restrict this approach to a minority of "problem" records (e.g. serials). On a large scale, it is normally not feasible to afford retrospective cataloguing (Dugall, 2001, p. 113–114).

However, the mere conversion of existing records into machine readable records is not cheap either; the cost of such a project may well exceed that of the automated library system itself (Library Information Technology Centre, 1994, p. 1). Studies of large conversion projects – where often a combination of various options and techniques is used<sup>1</sup> – have shown that on average the cost per record can be between 2.42 and 4.23 Euros,<sup>2</sup> which means that in total enormous sums of money are required for larger projects or national programmes as the ones mentioned above (UK: 130–160 million Euros, Germany: approx. 185 million).

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<sup>1</sup> See, for example, Hills, 1993; Library Information Technology Centre, 1994; Bryant, Chapman & Naylor, 1995; Seissl, 1997; Dugall, 2001.

<sup>2</sup> For the UK, Bryant (1997, p. 557) reported a mean cost figure of approx. €2.42–3.23 (£1.5–2.0), whereas in the more recent CURL study an average cost of €4.23 (£2.62) was estimated for "straight-forward" 19<sup>th</sup> and 20<sup>th</sup> century items, and almost twice as much for complex or specialist items (Leeves, Butler & Mealia, 1999, section 8); in Germany, an average cost of approx. €3.5 per item was estimated (Beyersdorff, 1993, p. 304–307). [Currency conversion is based on the rates published on 20/03/2002.]

The *scanning* or *digitization*<sup>3</sup> of the catalogue cards has become common practice in retroconversion – not only as a prerequisite for approaches that involve optical character recognition (OCR), but also when a digital duplicate of the catalogue is needed to support conversion work on a computer screen (e.g. typing, tagging, database searching). For example, Stoklasová (1999; 2000) describes a typical retroconversion project as a three-step process:

- Step I: *Scanning* – creation of high-quality images;
- Step II: *Transcription* – conversion of the images into (unstructured) ASCII text, either by OCR or manually;
- Step III: *Structuring* (tagging) – conversion of the ASCII text into structured records (e.g. UNIMARC), either automatically or manually.

As the scanning step can be done quickly and at reasonable cost, the idea emerged to apply suitable browsing software to the collection of card-images which would make it possible to offer it – both to library staff and to the users – as some sort of auxiliary or provisional online catalogue. The first known example of such a *card-image OPAC* was established at the Princeton University Library in 1994 (Henthorne, 1995).<sup>4</sup> From the mid-1990s on, similar catalogues started to appear in Europe,<sup>5</sup> showing some variation of the browsing component – e.g. simple alphabetical browsing, browsing of (partial) indexes, retrieval of OCR processed text – but always displaying the digital image of a catalogue card as the full view of a retrieved record (Figure 1-1). Some of these catalogues were originally offered on in-house networks, but soon the www became the commonly used platform.

Pietzsch (1998b, p. 482) summarizes the advantages of such electronic versions over their card counterparts as follows:

- retrieval speed – only trained librarians can search a paper catalogue faster than its online version;
- saving of users' time – no need to go to the library for searching the catalogue;
- independence from the library's opening hours;
- multi-dimensional search options (e.g. when all headings are offered as searchable text).

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<sup>3</sup> Following standard practice, these terms are used synonymously here; strictly speaking, *digitization* refers to the conversion of any analog material into digital form, whereas *scanning* means the digitization of specifically image-based analog material (Lee, 2001, p. 35–36).

<sup>4</sup> Bork (1997) mentions briefly that archival applications of a similar kind have been used for some time; however, in the field of librarianship, the Princeton project was presumably the first such application.

<sup>5</sup> Primarily, but not only, in the German-speaking countries.

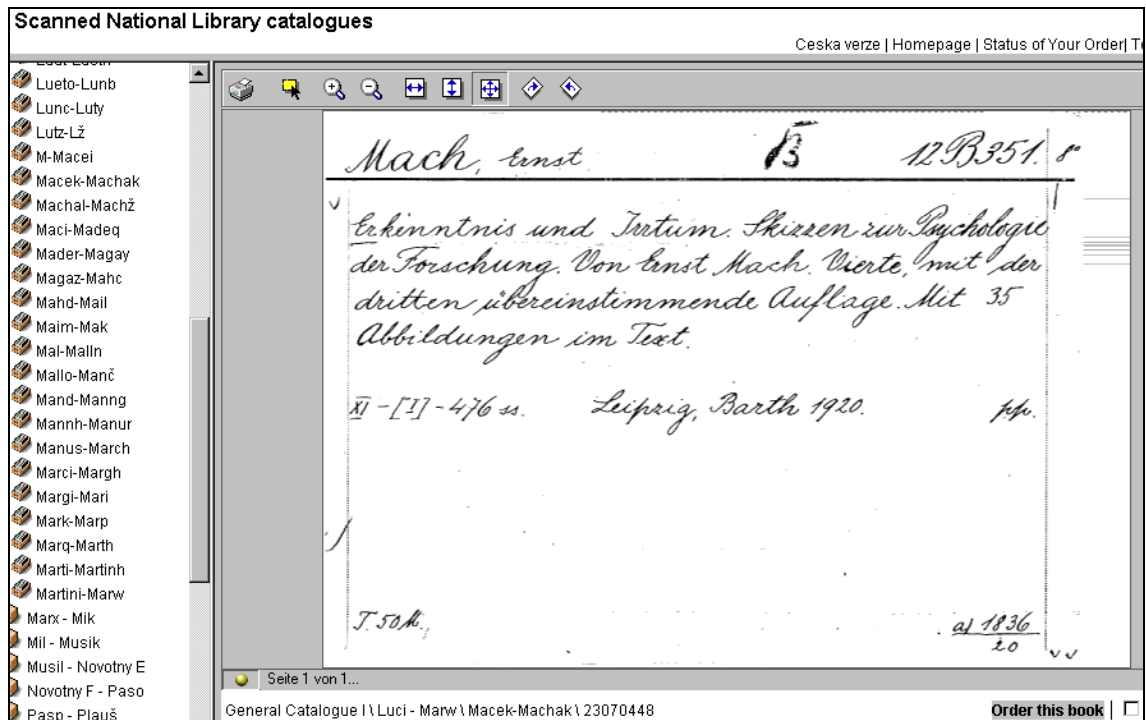


Fig. 1-1: A typical record display in a card-image catalogue<sup>6</sup>

Whilst the last-mentioned criterion applies only in certain cases, the following aspects need to be added to the above list:

- printing out / downloading of records – only possible in an online environment;
- online book ordering – appropriate components can be attached to the display of card-images;
- saving of library space – the availability of an online version makes it possible to remove the card cabinets.

However, from a critical point-of-view one could also argue

- that, with the exception of a few sophisticated solutions, no options for retrieval are offered that exceed those of traditional card catalogues;
- that the users – who are used to gaining some added value from computerization – might be frustrated by such solutions;
- that modern information technology is used (or abused) for the resurrection and perpetuation of catalogue cards which basically are relics from a past age and should be buried and forgotten rather than offered on a larger-than-ever scale.<sup>7</sup>

<sup>6</sup> National Library of the Czech Republic, General Catalogue I

<sup>7</sup> This applies primarily to card catalogues in German-speaking countries where antiquated cataloguing rules were used far into the second half of the 20<sup>th</sup> century.

## 1.2 Terminology and definition

So far, no standard terminology has been established for OPACs of the kind described above. Often they are referred to as "electronic", "scanned" or "digitized" card catalogues, or – particularly in the German-speaking countries – as "image catalogues".<sup>8</sup> In this dissertation, not only the (synonymous) terms *card-image catalogues* and *card-image OPACs* will be used, but also – as an analogy to the widely-used term *OPACs* – the newly proposed acronym *CIPACs* (card-image public access catalogues).<sup>9</sup>

CIPACs can be defined as online library catalogues that are based on databases of digitized catalogue cards and more or less sophisticated mechanisms for browsing or searching. For the purposes of this dissertation, *online* is defined as "available over the www", which means that mere in-house solutions will not be considered.

## 1.3 Aims and objectives

This dissertation aims to investigate CIPACs and to assess their impact on libraries and users. Are CIPACs useful OPAC alternatives or only low-cost interim solutions that are barely acceptable to the users? The general research goal is to establish an informed and up-to-date view of this area, which will be obtained by answering the following questions:

- (a) What CIPACs exist so far and where can they be identified? Which libraries in which countries have such catalogues, to what extent and how have they been implemented?
- (b) What kinds of CIPAC have been developed and how do these approaches differ in terms of retrieval capabilities and potential?
- (c) What are the main problems and issues interconnected with the creation and implementation of CIPACs?
- (d) How do CIPAC users cope with these systems? What is their current position in terms of awareness, behaviour and opinions?<sup>10</sup>

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<sup>8</sup> See also section 3.5.1.

<sup>9</sup> This acronym was first proposed by Denis Reardon, University of Central England. Even if some of the image catalogues are electronic versions of *sheaf* and/or *book* catalogues, the majority are computerized *card* catalogues so that in this dissertation, for convenience, "CIPAC(s)" will be used.

<sup>10</sup> In the original research proposal, it had also been envisaged to deal with the identification and ranking of criteria for the evaluation of CIPACs; however, after careful consideration it was felt this would require

In order to answer these questions this dissertation provides the following deliverables:

- A world-wide survey of CIPACs that exist so far in various countries and contexts, their main characteristics, features and retrieval capabilities;
- An analysis and discussion of the major issues in CIPAC implementation and use;
- An analysis of the reactions of a selected sample of CIPAC users.

## 1.4 Scope and limitations

Although this study intends to provide a comprehensive overview of the investigated area, some limitations need to be mentioned. First, the following account will focus on the *application* of CIPACs rather than on details of the technology (hardware, software, networks) that operates "behind" such catalogues. Second, although there are no geographical restrictions concerning the CIPACs surveyed, the analysis is predominantly based upon such applications for which materials (literature, library questionnaire, web-pages) in *English* and/or *German* were available. Third, the dissertation concentrates on *libraries*; similar applications that may exist in other contexts (e.g. archives, museums, industry) have not been covered. Finally, the user survey is exploratory by its conception and therefore leads to preliminary rather than definite results.

## 1.5 Methodology

Parts of the dissertation are based on both published and unpublished literature obtained by following up the references found in papers already known, by searching databases/bibliographies on CD-ROM<sup>11</sup> or available freely on the www,<sup>12</sup> by using web-based search engines,<sup>13</sup> by systematically looking at the web-sites of all CIPAC libraries, and by asking these libraries for relevant project literature.<sup>14</sup>

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an empirical study well beyond the scope of the present dissertation that should be undertaken as a separate work.

<sup>11</sup> LISA, Information Science Abstracts Plus.

<sup>12</sup> ERIC, DOBI, Current Cites.

<sup>13</sup> Mostly Google, but also AltaVista and Dogpile.

<sup>14</sup> As part of the CLQ.



An unstructured questionnaire – the *CLQ* (CIPAC Library Questionnaire) – was sent to all libraries known to operate a CIPAC by mid-2001,<sup>15</sup> in order to obtain information on aspects such as the reasons for and details of CIPAC implementation, perceived user reactions and details of any monitoring of use, project documentation (see above), policies and future plans. In addition, three extensive interview sessions were held with the creator of the Austrian National Library's CIPAC.<sup>16</sup>

In order to collect information on the search and retrieval capabilities of the various CIPACs all catalogues were repeatedly searched on the www; for the systems described in section 2.2 a standard type of query was used.

For the study of user reactions a web-based survey of CIPAC users was undertaken from February to April 2001. The respondents were recruited by placing buttons with links to the online questionnaire on the web-pages of eleven CIPACs in four countries (Austria, Switzerland, Czech Republic, Germany). A semi-structured online questionnaire was used for which versions were available in German, Czech and English. The final out-turn of this survey was 320 completed questionnaires.<sup>17</sup>

## 1.6 Structure of the dissertation

The dissertation begins with a world-wide survey of existing CIPACs (Chapter 2); after a presentation of the author's CIPAC web-page the characteristics of four main types of CIPAC are analyzed and the features of all fifty CIPACs known so far are compared (a comprehensive inventory of these fifty CIPACs is included as Appendix A1). In Chapter 3, the main problems and issues involved in the creation and implementation of CIPACs are identified and discussed; a case-study of one library's project of further conversion of a CIPAC to an OPAC is added as Appendix B4. Chapter 4 provides an account of the web-based CIPAC user survey and its main results. The study concludes with a review of findings and suggestions for further research (Chapter 5).

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<sup>15</sup> First in December 2000, and subsequently as other CIPACs were identified and/or started operation (for details, see Appendix B2; the questionnaire is reproduced as Appendix B1).

<sup>16</sup> Wilhelm Dikovich, interviewed on 13/11/2000, 18/12/2001, 23/01/2002.

<sup>17</sup> For details of the methodology applied see section 4.2.

## 2 A world-wide survey of CIPACs

The intention of this chapter is to draw an overall picture of the present CIPAC "scene". Therefore, it aims at identifying the CIPACs that have been set up so far, their retrieval capabilities and potential, and some of the issues interconnected with their creation. As no such comprehensive survey of CIPACs has been undertaken before, a number of methodological steps was required:

- various and repeated attempts were made to identify all institutions that operate CIPACs, and a web-page was created to document the findings of this search;
- literature on the individual CIPAC projects (articles, reports, and other documents) was searched, collected and scrutinized for relevant facts and figures;
- the *CIPAC Library Questionnaire* (CLQ)<sup>1</sup> was sent out to the institutions identified, in order to obtain details on the various CIPACs and maybe also additional documents;
- the web-pages of all institutions identified were repeatedly checked for information on their CIPACs; the various CIPACs themselves were searched and examined with regard to software, main features, help texts, etc.

The information obtained will be presented as follows: The chapter starts with a brief account of the CIPAC web-page maintained by the author. Then, four main categories of software for CIPAC systems are identified and the features of these systems are illustrated. What follows is a comparative survey of the characteristics of the fifty CIPACs known today. A geographically organized inventory of these CIPACs and their main features is included as Appendix A.

### 2.1 An international CIPAC web-page

The author's endeavour to systematically record all known CIPACs dates back to 1999 and in early 2000 led to the first version of a web-page which listed some 20 CIPACs. Additions to this list have been made continuously since. Information on existing and new CIPACs was obtained from a variety of sources, such as the relevant literature, word passed on by fellow librarians, the *LCQ*, repeated checks of the web-pages of relevant software providers, the *CIPAC user survey*,<sup>2</sup> and by regularly searching the www using the *Google* search engine.

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<sup>1</sup> For details see Chapter 3 (introductory paragraphs) and Appendices B1/B2.

<sup>2</sup> See Chapter 4.

**The International CIPAC List**  
CIPAC = Card-Image Public Access Catalogue

[AUT](#) | [CHE](#) | [CZE](#) | [DEU](#) | [ESP](#) | [FRA](#) | [GBR](#) | [ITA](#) | [LTU](#) | [POL](#) | [USA](#)  
(ISO 3166 country codes)

**AUT – Austria**  
**Graz:**  
[Graz University of Arts Library](#)  
[Styrian State Library](#)  
**Innsbruck:**  
[University of Innsbruck Faculty of Theology Library](#)  
**Vienna:**  
[Austrian National Library](#)  
[University of Vienna Library](#)  
[Vienna University of Economics and Business Administration Library](#)  
[Vienna City and State Library \(Manuscript Collection\)](#)  
[Austrian Museum of Applied Arts Library](#)

**CHE – Switzerland**  
**Basel:**  
[Basel University Library](#)  
**Berne:**  
[Swiss National Library](#)  
[Berne City and University Library](#)  
**Luzerne:**  
[Luzerne Central and University Library](#)  
[Luzerne State Archives Library](#)  
[Library of the Swiss Capuchin Order](#)  
**Zurich:**  
[Zurich Central Library](#)

**CZE - Czech Republic**  
**Brno:**  
[Moravian Library](#)  
**Prague:**  
[National Library of the Czech Republic](#)  
[Parliamentary Library of the Czech Republic](#)  
[Library of the Academy of Sciences of the Czech Republic](#)

**DEU - Germany**  
**Berlin:**  
[Berlin Central and Regional Library](#)  
[University Library, Freie Universität Berlin](#)  
[Berlin Senate Library](#)  
[Ibero-American Institute \(Prussian Cultural Heritage Foundation\)](#)  
**Bochum:**  
[Bochum University Library \(test version\)](#)  
**Dortmund:**  
[Dortmund City and Regional Library](#)  
**Dresden:**  
[Saxony State and Dresden University Library](#)  
**Frankfurt:**  
[HeBIS-Retro Union Catalogue](#)  
**Göttingen:**  
[Goettingen State and University Library](#)  
**Greifswald:**  
[Greifswald University Library](#)  
**Halle:**  
[Saxony-Anhalt University and State Library](#)  
**Hamburg:**  
[Hamburg Institute of International Economics](#)  
**Heidelberg:**  
[Heidelberg University Library](#)

**Kiel:**  
[Kiel University Library](#)  
[Kiel Institute of World Economics Library](#)  
**Leipzig:**  
[Leipzig University Library](#)  
**Magdeburg:**  
[Magdeburg University Library](#)  
**Munich:**  
[Bavarian State Library](#)  
**Potsdam:**  
[Potsdam University Library - Babelsberg Library](#)

**ESP - Spain**  
**Barcelona:**  
[Library of Catalonia](#)

**FRA - France**  
**Paris:**  
[Interuniversity Medical Library](#) (Catalogue ancien 1477-1952)

**GBR - United Kingdom**  
**Edinburgh:**  
[Edinburgh University Library](#) (Special Collections)  
**London:**  
[British Library of Political & Economic Science \(LSE\)](#)  
[University of London Library](#)

**ITA - Italy**  
**Bologna:**  
[Archiginnasio Library](#) (Catalogo Frati-Sorbelli)  
**Florence:**  
[Marucelliana Library](#)  
[Central National Library \[demo version\]](#)  
[Uffizi Gallery Library](#) (Fondo Carocci)  
**Rome:**  
[Alessandrina University Library](#) [IE only!]  
**Trieste:**  
[University Library](#)

**LTU - Lithuania**  
**Vilnius:**  
[National Library of Lithuania](#)

**POL - Poland**  
**Cracow:**  
[Jagiellonian University Library](#)

**USA - United States**  
**Princeton, NJ:**  
[Princeton University Library](#)  
**Richmond, VA:**  
[Library of Virginia](#)

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Course: MSc Inf. & Lib. Mgmt.; UCE Birmingham, UK  
Last update: 17/05/2002  
Thanks to W. Dikovich (Vienna), G. Lunati (Florence), D. Reardon (Birmingham), for providing information on new CIPACS.

W3C HTML 4.01

Fig. 2-1: The International CIPAC List

In the last two years, this web-page – now established as *The International CIPAC List* and hosted by the Vienna University of Technology Library<sup>3</sup> – has grown to a list of fifty CIPACS in eleven countries (02/2002). The list is arranged geographically by countries<sup>4</sup> and (English) place names, and gives both the (English) names of the respective institutions and the web-addresses (URLs) of their CIPACS in the form of http-links. Links to this list can be found already on LIS-related web-pages in various countries such as Australia<sup>5</sup>, Germany<sup>6,7</sup> and the United States.<sup>8</sup> In a recent Italian publication it is referred to as a useful source of information (Lunati, 2001, p. 4).

## 2.2 Major CIPAC software solutions

### 2.2.1 CIPACS based on binary searching

CIPACS based on the principle of *binary searching* feature a browsing algorithm where the user makes a number of decisions which reduce the set of documents step-by-step until there are just a few left that can be viewed easily in sequential order. The best known software of this kind is *KatZoom*,<sup>9</sup> which was developed at the Austrian National Library (ONB).<sup>10</sup> In 1996/97, when the ONB first started to think about converting its old catalogues – more than 6 million cards – into CIPACS, solutions such as the Swiss *Spider* system<sup>11</sup> and CIPACS based on manually created indexes<sup>12</sup> were considered but soon declined as too costly. The Library decided to opt for a strategy in which CIPACS would play a role only as *interim* online catalogues, i.e. until the implementation of a *final* (better) conversion was feasible. The software for such an interim CIPAC was required to be cheap (no manual/intellectual input for indexes), simple, and suitable for offering the catalogue via WWW – it needed to be developed in-house.

*KatZoom* makes use of a "division factor" that splits the total set of documents into  $n$  parts, the subset selected by the user again into  $n$  parts, and so forth, until the resulting

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<sup>3</sup> <http://www.ub.tuwien.ac.at/cipacs/c-i.html> (formerly: <http://www.8ung.at/oco/cipacs-international.html>)

<sup>4</sup> The three-letter ISO 3166 country codes are used for this purpose.

<sup>5</sup> [http://www.library.unsw.edu.au/links/Search\\_Engines/Library\\_Catalogues/more2.html](http://www.library.unsw.edu.au/links/Search_Engines/Library_Catalogues/more2.html)

<sup>6</sup> <http://www.fbi.fh-koeln.de/fachbereich/personen/goedert/www-opacs.htm>

<sup>7</sup> <http://www.bsz-bw.de/wwwroot/text/zkdial32.html>

<sup>8</sup> [http://www.photonics.cusat.edu/links\\_library.html](http://www.photonics.cusat.edu/links_library.html)

<sup>9</sup> Dikovich & Wilhelm (1997); Dikovich (1998; 2000)

<sup>10</sup> By W. Dikovich of the ONB's IT department.

<sup>11</sup> *BerninaSpider* is described in section 2.2.4.

<sup>12</sup> An example of this principle is the *Chopin* system described in section 2.2.2.

subset is less/equal  $2*n$ . If the division factor is 4, a set of 1,000 documents can be browsed by four clicks (= decisions), and if the factor is 8, only two clicks are required. From the user's point-of-view, a small division factor (e.g. 4) should be more convenient, because on each step only a small number of subsets is created, which makes it easier to decide which one to select. This means that by employing 4 as the division factor, a search of the ONB's largest card catalogue<sup>13</sup> requires eight mouseclicks until a result set of eight cards or less (in fact: six) is reached.

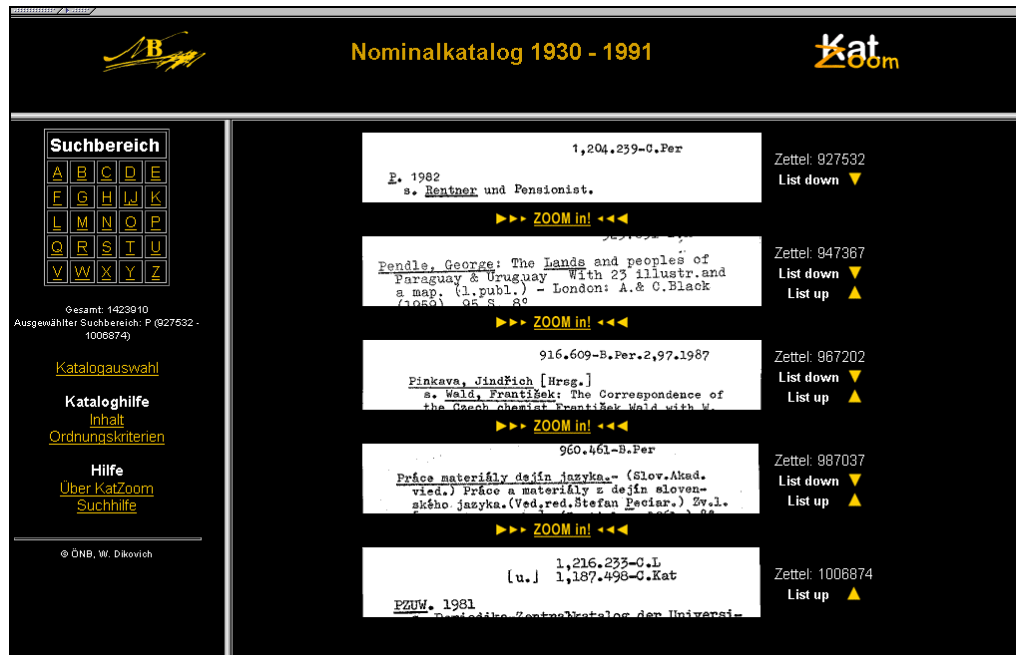


Fig. 2-2: KatZoom – first division (letter "P")

When KatZoom was programmed it was decided to use the letters of the alphabet (A–Z) for supporting the first decision to be made by the user, so that the total set of documents would be divided into subsets of varying size.<sup>14</sup> The system makes use of cropped images for symbolizing the resulting subsets; it shows the first card of each of the subsets, plus the last card of the last subset. Figure 2-2 shows an example of a known-item search<sup>15</sup> in the ONB's 1930–1991 author/title catalogue: After the first decision – a click on the letter "P" – five cropped images are displayed (normally just one screen). Now the user has to determine the section into which he/she wishes to "zoom" and click on the respective button shown between the cropped images (in the present example this is the third section). Another screen with five cropped images follows, and, after that, four more screens until the last one with such short displays appears

<sup>13</sup> This is the 1930–1991 subject catalogue with approx. 1.69 million cards.

<sup>14</sup> This was actually the librarians' rather than the software designer's wish.

<sup>15</sup> In this example and in the following ones the 1935 edition of Karl R. Popper's *Logik der Forschung* (The Logic of Scientific Discovery) is the item looked for.

(Figure 2-3). Whenever the user wishes to skip "zooming",<sup>16</sup> he/she can click on the "List"-button (down or up) to the right of each cropped image in order to get a screen with the full images of 16 consecutive cards, starting at this position. The card numbers (also to the right of each cropped image) indicate roughly how far one has gone; in the case of the screen in Figure 2-3 one can tell that the next screen will show full card-images. A mouse-click on one of the card numbers brings up a full view of the corresponding card in a new window (optional feature, not implemented on all *KatZoom* CIPACS).

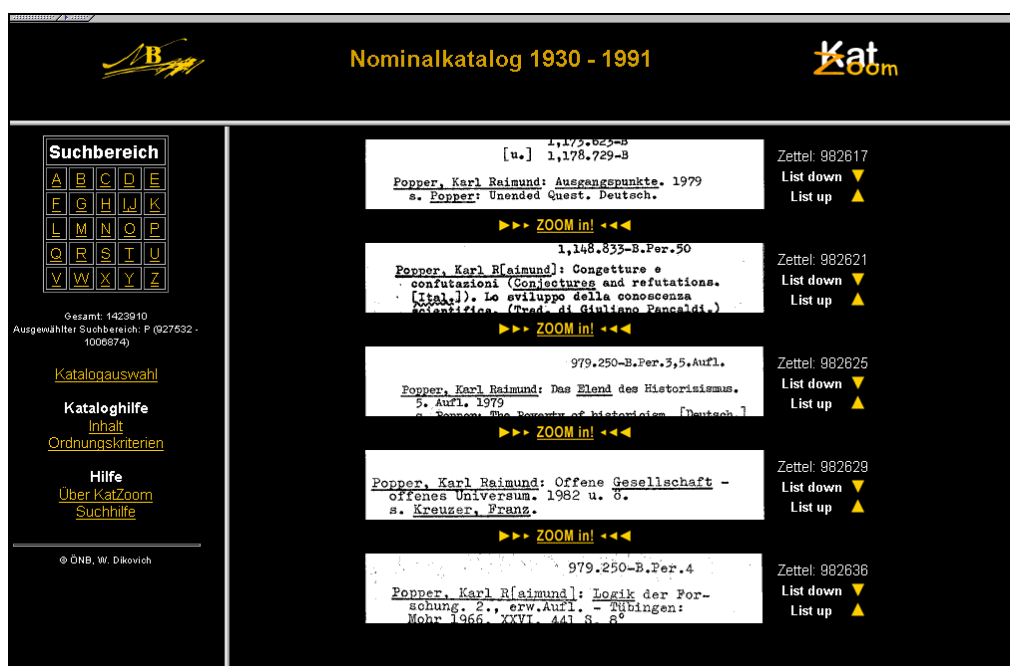


Fig. 2-3: *KatZoom* – last cropped view before full image display

Finally, after having selected the fourth section (in Figure 2-3), the user is shown a screen with full images (Figure 2-4) which either includes the desired card or proves that the library does not hold that document (provided all clicks were correct).

*KatZoom* also has an optional functionality for ordering books from the stacks. If this feature is implemented, the user finds an "Order"-button to the right of each full card-image (as in Figure 2-4). When clicked, this button opens a new window that shows both the card and a form for ordering the book. The user needs to copy the call number from the card (manually) and enter his/her personal data and userID.<sup>17</sup>

<sup>16</sup> For example, if one of the cropped images happens to be the card searched for.

<sup>17</sup> However, on the collection of the ordered items the user needs to fill in traditional loan slips again. An example of the form is shown in Appendix A (Fig. A-1).

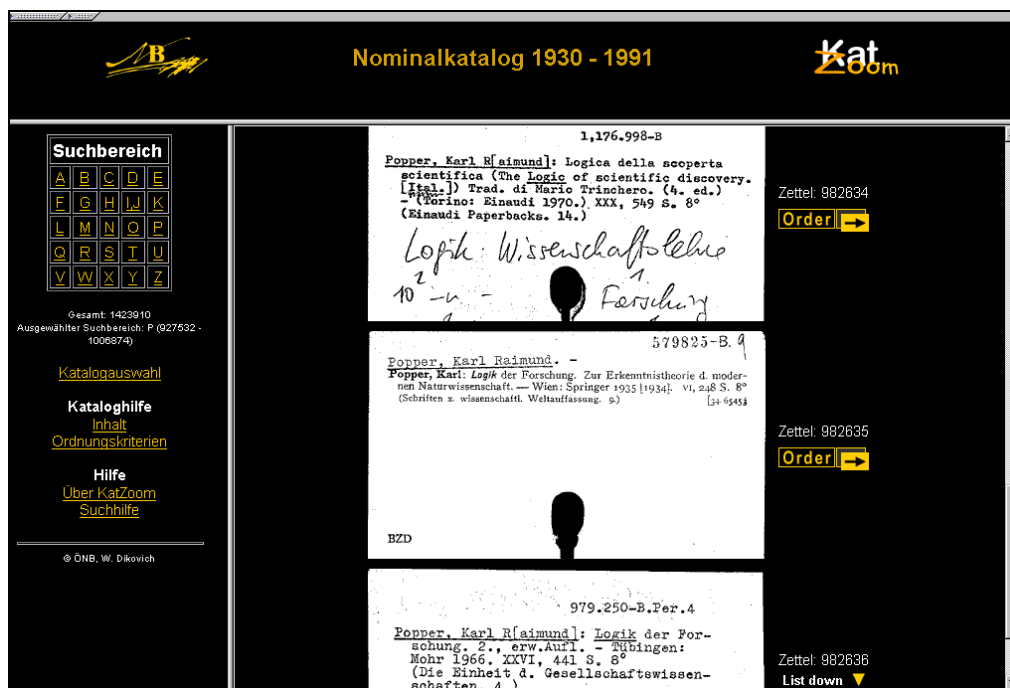


Fig. 2-4: KatZoom – full image display

An interesting module for librarians is the *KatZoom* editing tool that supports features such as loading new batches of card-images, deleting and/or moving individual card-images, replacing a card-image by text (for correcting call numbers etc.), and inserting newly written (textual) cards.

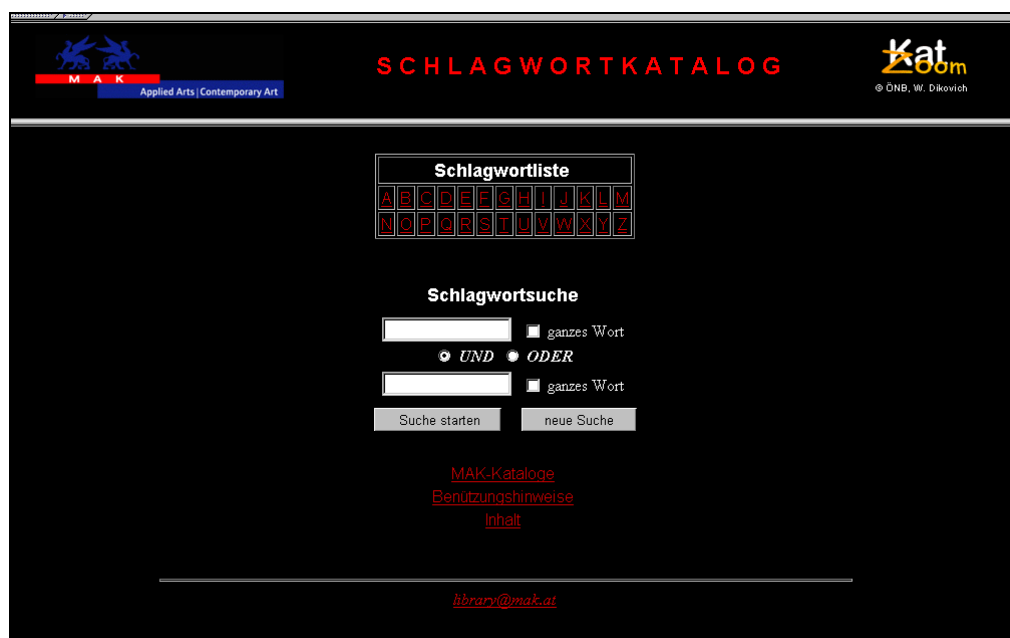


Fig. 2-5: KatZoom – modified version

After the initial installation at the National Library, a number of other Austrian libraries started using the software for their CIPACs as well.<sup>18</sup> In 2001, a modified version of *KatZoom* was released that does not rely on binary searching but features index browsing as well as Boolean searching of the text of the index (which can be useful for subject headings). In the example shown in Figure 2-5, the user can either position the display of the subject headings index at a specific letter (by clicking on the desired letter in the table shown in the upper section of the screen), or find all subject headings containing one and/or two specific terms (by filling in the search box/es and selecting the appropriate Boolean operator if two search terms are entered).

In either case the system displays in the left frame a scrollable list of all matching index terms (e.g. subject headings) including the number of hits, and after the user has selected (clicked) the desired entry he/she is shown a full display of the corresponding card-images in the right frame (Figure 2-6).

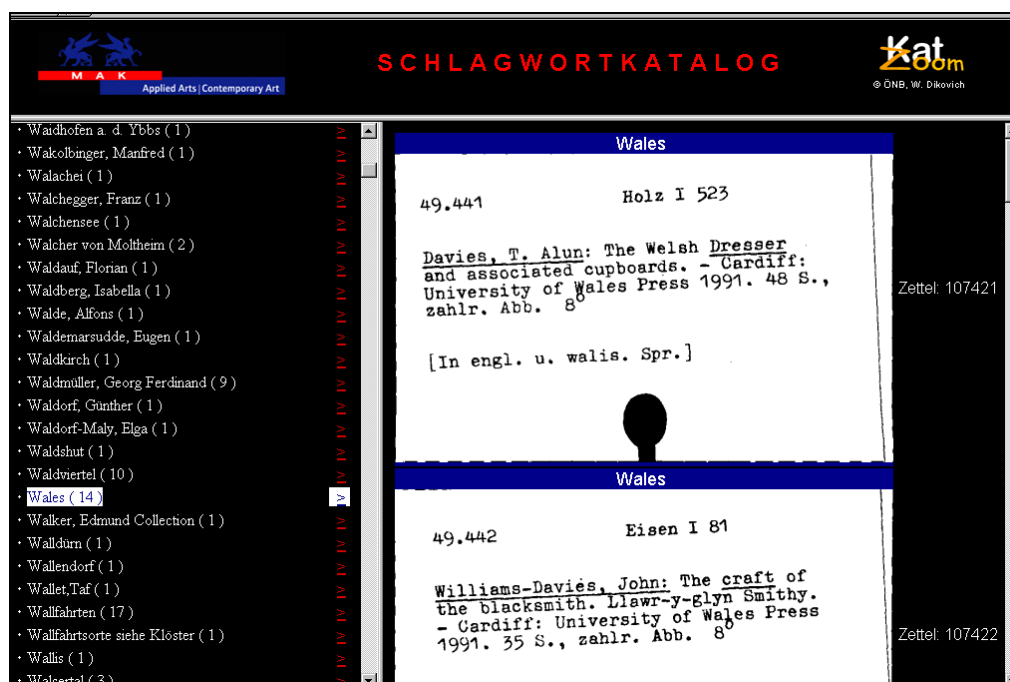


Fig. 2-6: *KatZoom* – index browsing

### 2.2.2 CIPACs based on partial indexes

CIPACs based on the principle of a *partially indexed* catalogue need some sort of manual and/or intellectual input as a prerequisite to their creation. A partial index can be made of existing leader cards (guide cards), newly produced leader cards, or simply by index-

<sup>18</sup> See Appendix A1.



ing every  $n^{\text{th}}$  card by keying in the headings (author/title headings, subject headings). Typical examples for the latter are indexes based on the headings of every 20<sup>th</sup>, 50<sup>th</sup>, 100<sup>th</sup> or 200<sup>th</sup> card.<sup>19</sup> The best known software of this kind is *Chopin*<sup>®</sup>,<sup>20</sup> a system developed by the German software firm *Schneider GmbH* (Friedberg)<sup>21</sup> and marketed by *MikroUnivers GmbH* (Berlin),<sup>22</sup> a service bureau for scanning, OCR and microfilming. On the www it first became visible in 1997 when the Berlin Central and Regional Library – that had already been offering its first CIPAC on an in-house network since 1996 – was looking for a new software that would replace its previous *CardView*<sup>23</sup> system and make the card-image catalogue available over the Internet (Rönsch, 1998). This library and others (e.g. the Saxony State and University Library at Halle) also contributed to the development of the software. Today, *Chopin* is the CIPAC software with the largest number of libraries applying it, with installations in Germany and Switzerland,<sup>24</sup> including some of the largest CIPAC sites (Halle, Kiel, Hamburg, Berlin).

Fig. 2-7: *Chopin* – entering a search term

On the first screen of a typical *Chopin* CIPAC, the user finds a search box where he/she can enter a search term, e.g. the surname of the author or the first letters of that name (Figure 2-7). This "search term" is used by the system not for *searching* the database but for finding the section of the leader card or headings index that represents – in an

<sup>19</sup> Details of individual CIPACS are given in Appendix A1.

<sup>20</sup> MikroUnivers (1998); a folder is available on [http://62.104.137.109/chopin/info/prospekt\\_chopin.pdf](http://62.104.137.109/chopin/info/prospekt_chopin.pdf)

<sup>21</sup> <http://www.schneider-mt.de>

<sup>22</sup> <http://www.mikrounivers.de>

<sup>23</sup> Developed by MikroUnivers together with a Munich software house.

<sup>24</sup> The software developer maintains a web-page on *Chopin* implementations (<http://www.dilib.de>).

alphabetical sense – the term. It may well be that the term typed by the user actually appears as one of the index entries shown. This is more likely if the catalogue represents many works of a specific author and many cards were indexed (e.g. every 20<sup>th</sup> card), it is less likely if there are only few publications by that author and/or the gap between entries is wide (e.g. every 200<sup>th</sup> card), and it is – obviously – impossible if there are no works by that author in the catalogue. In any case, the system marks or highlights the index entry which makes the closest match for the user's input, and also offers to browse the index up or down (Figure 2-8).



Fig. 2-8: *Chopin* – display of browse index

If the index is based upon leader cards, the user can safely click on the highlighted entry and start browsing through the card-images. This is also true when the original search term is *not* shown as one of the index entries. However, if it *is* shown as the highlighted entry the user must be aware that only every n<sup>th</sup> card has been indexed, which means that there may be works by the same author filed before the indexed card, so that he/she needs to click on the preceeding index entry just to be on the safe side. In the present example the user will probably click on the highlighted entry to receive a full view of the indexed card (Figure 2-9).<sup>25</sup>

It is now possible to browse forward/backward card by card, or to "jump" 5, 20, or 100 cards forward/backward, in order to find the desired work (Figure 2-9) or to make sure

<sup>25</sup> For an experienced user it should be obvious that some works by Popper must be filed *before* the one shown, but a novice user may not reckon with that.

that the library does not hold a copy. The description of *Chopin* CIPACS in Appendix A1 shows that the intervals for jumping may differ from catalogue to catalogue.

*Chopin* makes use of a Java applet for the visualization of TIFF-images in the user's web browser. This applet also permits setting the size of the image, zooming in/out, changing the resolution, the brightness and the contrast, rotating the picture, inverting the colours, printing the card-image and downloading it on the user's local workstation (Figure 2-10). Some earlier versions of *Chopin* which are still in use have a somewhat simpler interface for displaying GIF-images.<sup>26</sup>

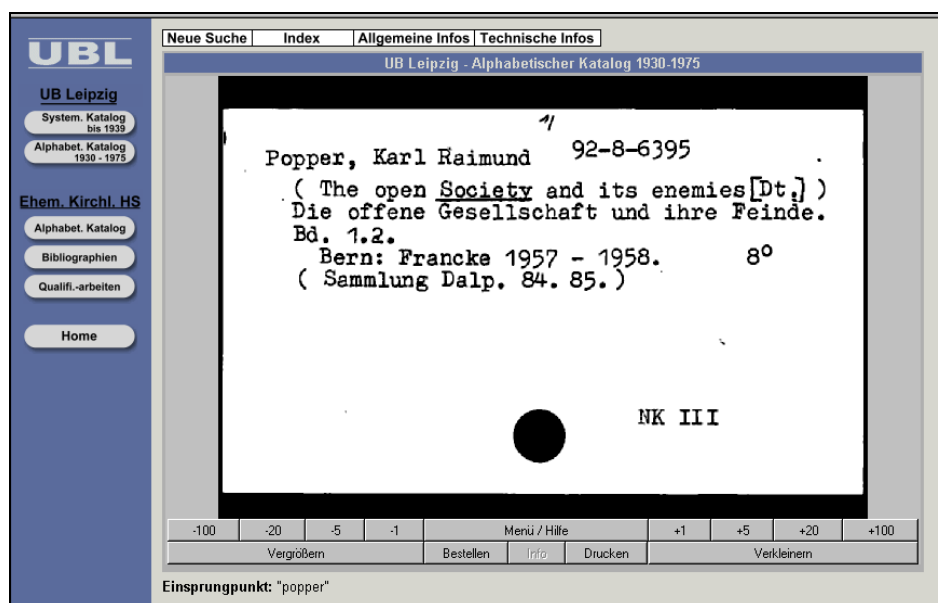


Fig. 2-9: *Chopin* – display of first card-image

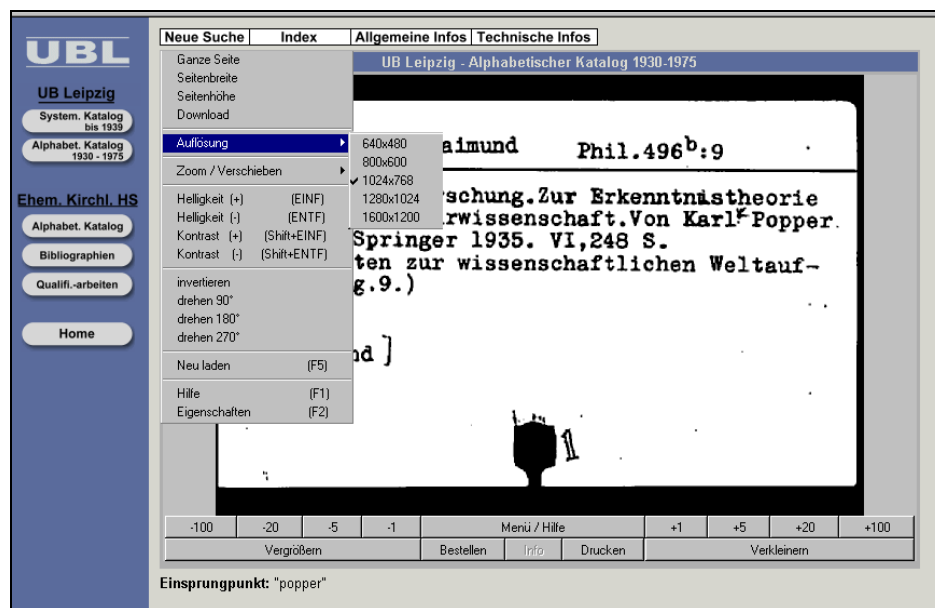
If implemented, the full display of every card-image includes an "order"-button which, on mouse-click, opens a new browser window containing a form for ordering the book from the stacks.<sup>27</sup> The user only needs to enter his/her personal data and to select the desired collection point from a list. It is not necessary to copy the call number to this form as the order slip that is printed out in the library includes the image of the catalogue card.

Other features of *Chopin* include Boolean searching of the terms in the browse index (mainly for subject headings),<sup>28</sup> and interfaces specially designed for classified catalogues (navigation in up to ten levels of the classification's tree structure) as well as for book catalogues.

<sup>26</sup> For an example, see Appendix A1, CIPAC no. 19 (Fig. A-4)

<sup>27</sup> For an example, see Appendix A1, CIPAC no. 10 (Fig. A-2)

<sup>28</sup> For an example, see Appendix A1, CIPAC no. 29 (Fig. A-6)

Fig. 2-10: *Chopin* – Java applet options

### 2.2.3 CIPACS based on virtual drawers

CIPACS based on the headings of *virtual drawers* are a variation of partial index systems. They also feature a partial index but one that is made of the labels on the original catalogue drawers (and racks). The indexes of such systems are normally much smaller and less specific than they would be if every  $n^{\text{th}}$  card was indexed,<sup>29</sup> but more specific than just the letters A–Z as used by *KatZoom*. Furthermore, drawer labels are usually *inclusive* as they indicate both the beginning and the end of the sequence of cards (e.g. "POOLER TO PORRE", "PORRI TO POSTE", "POSTG TO POV", and so forth). Whereas a typical partial headings index only shows every  $n^{\text{th}}$  card (so that novice users might believe that the author looked for is not in the catalogue), a virtual drawer index suggests completeness, just as the card cabinets and drawers previously did.<sup>30</sup>

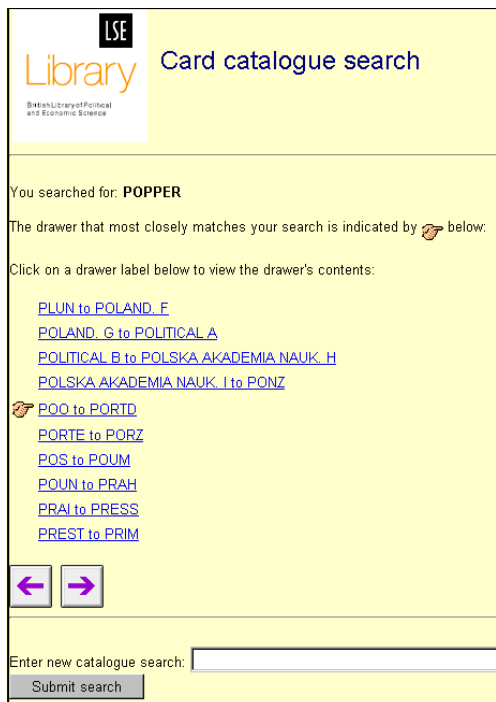
In the virtual drawer category of CIPACS there is no leading software product; most programs are home-made solutions of individual libraries and not shared with other institutions. One that is actually used by two libraries is the (unnamed) system created in 2000 by the British Library of Political & Economic Science (BLPES) at the London School of Economics (LSE)<sup>31</sup> that is also used by the University of London Library. This system starts with a search box; when the user enters a term, the software displays

<sup>29</sup> A drawer may hold 1,000 cards or even more.

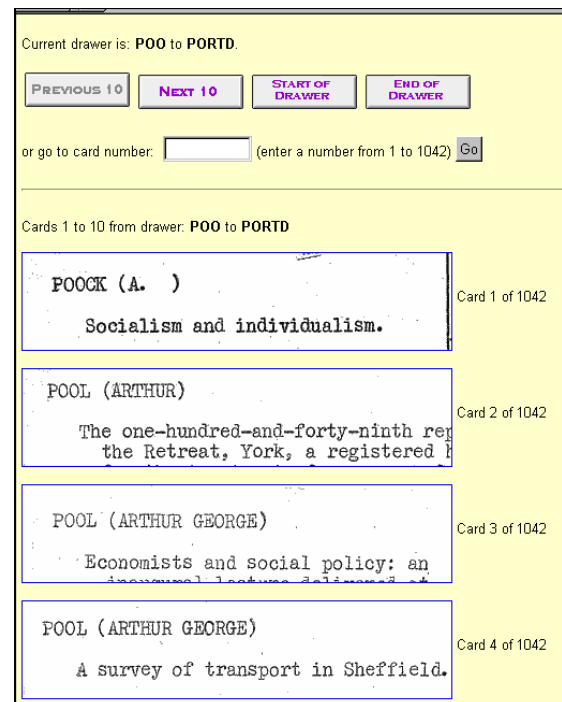
<sup>30</sup> A partial index based on guide cards of the same "from-to"-type as drawer labels would be even better though.

<sup>31</sup> Price (2000)

a list of the matching section of drawer labels, highlighting the one to look in for the search term (Figure 2-11). The user may scroll the index up or down, or click on one of the virtual drawer labels. On the selection of the desired drawer, the system displays the first ten cards of this drawer as cropped images (Figure 2-12). Now the user can either browse through the drawer by viewing ten cards at a time, or jump to a specific card by entering its number (the total number of cards in this drawer is also shown). Finally, when those ten cards have been found that include the work the user was looking for, a full display can be seen by clicking on the respective short view (Figures 2-13, 2-14).



**Fig. 2-11:**  
**BLPES – display of drawer label index**



**Fig. 2-12:**  
**BLPES – display of first images (cropped)**

The University of London Library implemented a slightly modified version of this system. It also starts with a search box but, as an alternative, offers to click on one of the letters A–Z to start displaying the drawer labels index at this letter; the full display of the card-images is shown in a separate browser window<sup>32</sup> and also has a button for online ordering books from the stacks.

Whilst several more or less similar systems can be found in a number of libraries around the world,<sup>33</sup> a unique variation that combines drawer labels with binary searching was

<sup>32</sup> See Appendix A1, CIPAC no. 41 (Fig. A-9)

<sup>33</sup> For example, the system at the Marucelliana Library at Florence skips the first two steps (selection of drawer, short views) by going straight to the display of the first full card-image of the drawer that matches the user's search term; see Appendix A1, CIPAC no. 43 (Fig. A-10)

developed by the Moravian Library (Czech Republic). This CIPAC shows the cropped images of every 100<sup>th</sup> card in the drawer, i.e. cards no. 1, 101, 201, etc. The user selects one of these batches and now gets cropped images of every 10<sup>th</sup> card, e.g. 201, 211, 221, ... , 291. After another click the full images of ten cards are displayed.<sup>34</sup>

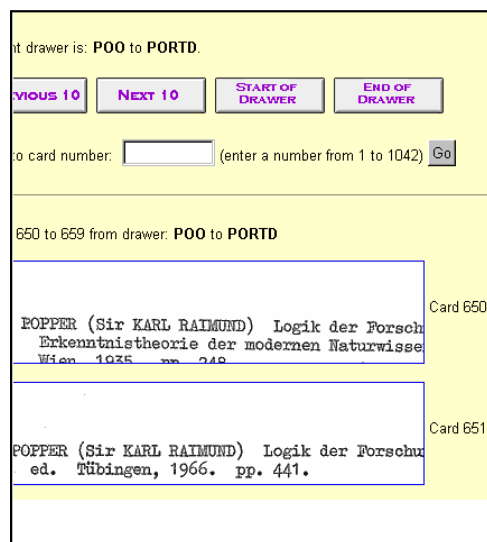


Fig. 2-13: *BLPES* – cropped card-images (including sought document)

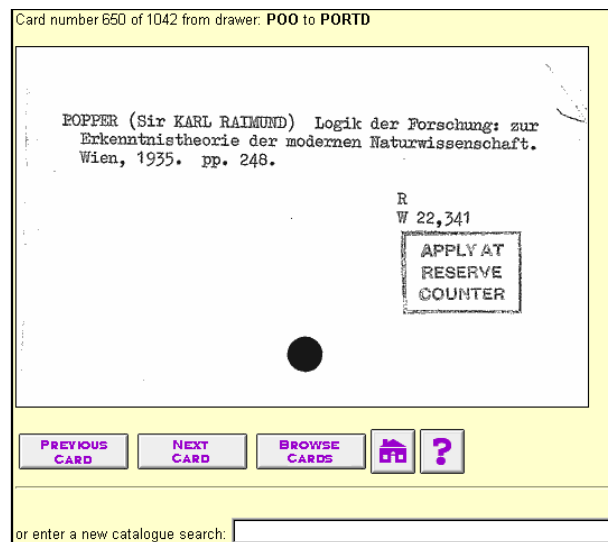


Fig. 2-14: *BLPES* – full display of document

#### 2.2.4 CIPACS based on searching of OCR processed text

Although CIPACS based on the searching of *OCR processed text* were among the first implemented card-image online catalogues, they have remained the exception rather than the rule. The best known of these systems is *BerninaSpider*<sup>35</sup> that goes back to the first half of the 1990s when a team at the Zurich Federal Institute of Technology started experimenting with probabilistic indexing and retrieval of texts derived from the scanned images of catalogue cards<sup>36</sup> by optical character recognition (OCR). They found that even if the texts were rather short (on average only 23 terms per card) and very noisy (33 percent recognition errors), a term weighting approach based on a probabilistic model of search term occurrences – taking OCR errors into account – would lead to very good retrieval results (presented as ranked lists of hits). When searching the author headings only, the algorithm *always* finds the desired card within a distance

<sup>34</sup> See Appendix A1, CIPAC no. 15

<sup>35</sup> The system was originally called *Spider*, then *EuroSpider*, until the latter term became the name of a company that was founded to market this and other information retrieval systems. Today, a few other Swiss libraries are using the system but it has not been sold to libraries in other countries.

<sup>36</sup> From the old author/title catalogue of the Zurich Central Library; this catalogue contains many old cards of bad typographical quality and cards with handwritten headings and/or amendments.

of  $\pm 10$  cards; in 98 percent this distance was even less than  $\pm 3$  cards (Mittendorf, Schäuble & Sheridan, 1995; Schäuble, 1996; Schäuble & Sheridan, 1996). In contrast to other CIPACS this system makes it possible to search not only the *headings* but also the *full text* of the cards. The system produces significantly better search results if many search terms (from the full-text) are used, but if any of the search terms matches with the heading the card is judged as more relevant (Schäuble & Sheridan, 1996). In spite of its probabilistic full-text retrieval features, *BerninaSpider* is still a card-image OPAC system – what the user is shown is the digitized image of the catalogue card and not the result of the OCR conversion (which remains invisible).

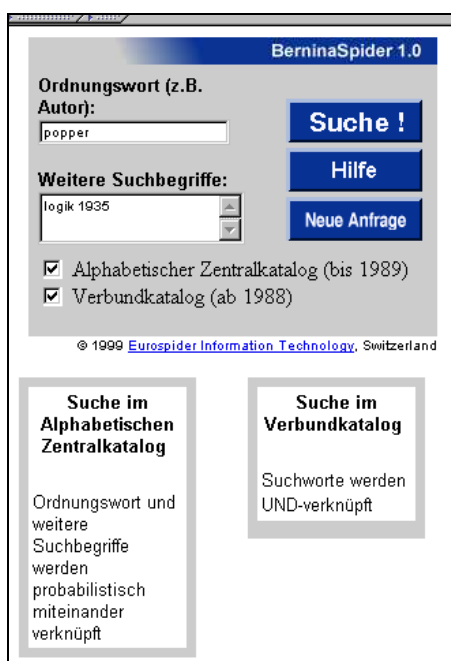


Fig. 2-15: *BerninaSpider* – search boxes

As shown in Figure 2-15, the system offers two search boxes – one for terms from the catalogue card headings, and a second one for terms from the full texts of the cards. The version used at the Zurich Central Library has an additional option not present on the other *BerninaSpider* CIPACS: It can perform (simultaneously) a free-text search of the Swiss Union Catalogue (a "normal" Aleph 500 OPAC system; second checkbox). In our example the author's name was searched as a headings term, and a word from the title plus the publication year were searched in the body of the cards. Searching the union catalogue was requested, too (second checkbox).

The reaction of the system is quite impressive as it manages to locate the correct card straight away (Figure 2-16). Only a single mouseclick was necessary to get this result. The obvious drawback is that it is relatively slow; while the *Spider* system was still working the parallel OPAC search had been long finished. Even so, the time needed for a search is about the same as on the other systems where the user needs to make several decisions/mouseclicks. The image of the card that the system identifies as most relevant finally appears in the right frame. The headings of the neighbouring cards are also displayed and the user can browse backward or forward at will. In the example it seems

unlikely that the author's name was read properly when the scanned card-image was processed by OCR, but the system nevertheless arrived at the correct card.<sup>37</sup>

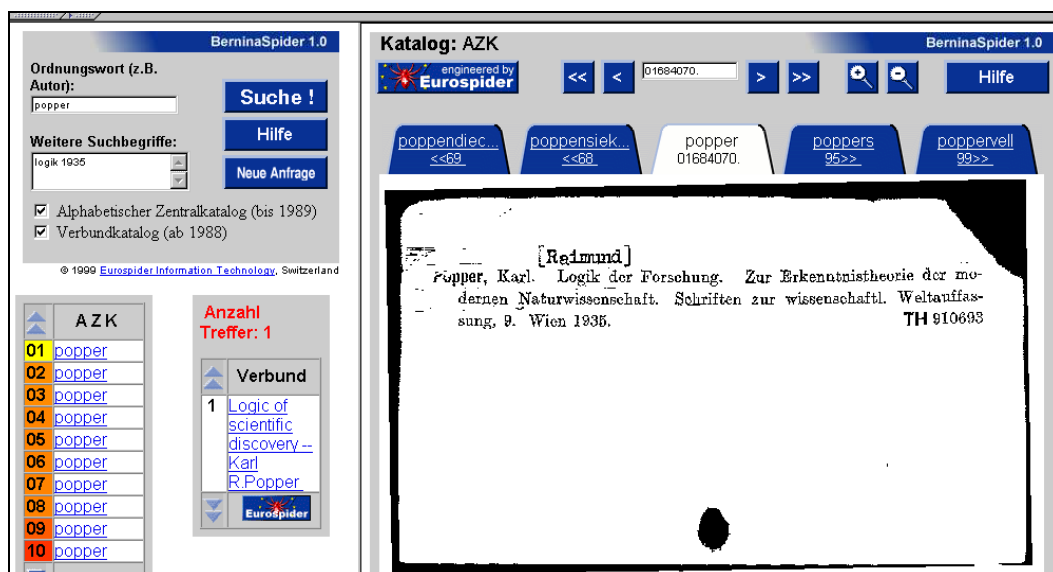


Fig. 2-16: *BerninaSpider* – display of search results

*BerninaSpider* has also an optional component for ordering the retrieved documents online. The user is required to identify the call number (and its structural parts) on the catalogue card, type it into the search boxes beneath the card-image and click on an "order"-button. Subsequently, the system shows in a new browser window the call number index of the library's OPAC where the correct number needs to be identified once more before an order can be placed (Figure 2-17).

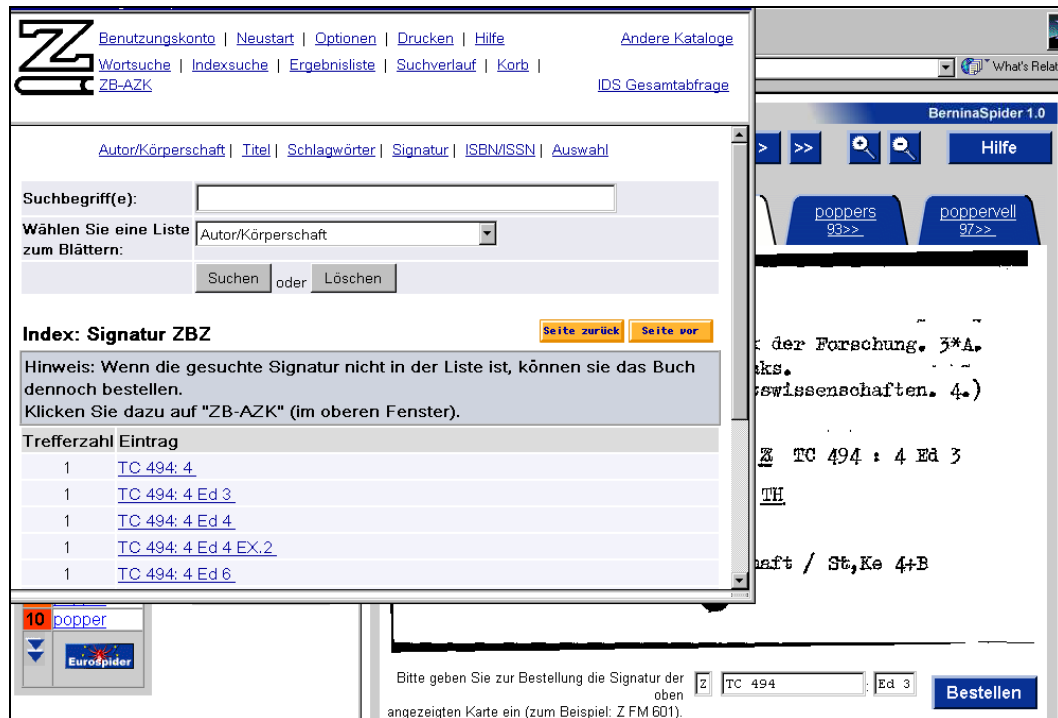
Recently, two other systems based on OCR processed text were released. One of them, a newly developed add-on for the existing CIPAC of the Heidelberg University Library<sup>38</sup>, is based on a similar algorithm to that used by *BerninaSpider* but claims to be simpler and faster (Pietzsch, 2001b). The second one was developed for the conversion of the Hesse Union Catalogue, *HeBIS-Retro*.<sup>39</sup> This system was created by means of a number of sophisticated techniques for the recognition of the structures of the catalogue cards and – after rigorous quality control – the transformation of these structural elements into HTML-coded categories suitable for online retrieval (Dugall, 2001).

<sup>37</sup> When searching by words from the headings only, the system is normally less precise if the headings were not dechiffred properly by OCR.

<sup>38</sup> See Appendix A1, CIPAC no. 30

<sup>39</sup> See Appendix A1, CIPAC no. 25



Fig. 2-17: *BerninaSpider* – online ordering

## 2.3 A comparative overview of CIPACs

In this section the attempt is made to illustrate the present CIPAC "scene" by comparing the fifty card-image online catalogues listed on the CIPAC web-page.<sup>40</sup> For this purpose, the main characteristics and features of these catalogues – as identified in the literature, the *CLQ*, and on the WWW – were recorded in two ways:

- A structured inventory of CIPACs was established, based on the following categories: country, location, year of implementation, URL, contact, type of catalogues, technical information (number of cards, image format, manual input, OCR processing, software), navigation/retrieval, online ordering, online help, and sources.<sup>41</sup>
- This inventory, together with additional information, was then used for creating a matrix which provides a comparative overview of CIPACs.<sup>42</sup>

<sup>40</sup> See section 2.1

<sup>41</sup> Included as Appendix A1.

<sup>42</sup> Included as Appendix A2. Although every attempt was made to fill every cell of the matrix, this has not been possible in *all* cases. For this reason, the figures presented in the following sections are sometimes based on less than 50 CIPACs; the number of cases is always given as N.

### 2.3.1 Geographical distribution

With reference to the geographical distribution of CIPACs (Figure 2-18), Germany lies far ahead, followed by two smaller countries (Austria, Switzerland). Although CIPACs have been implemented in a number of other countries, it can be claimed that they are predominantly a phenomenon of the German-speaking world.

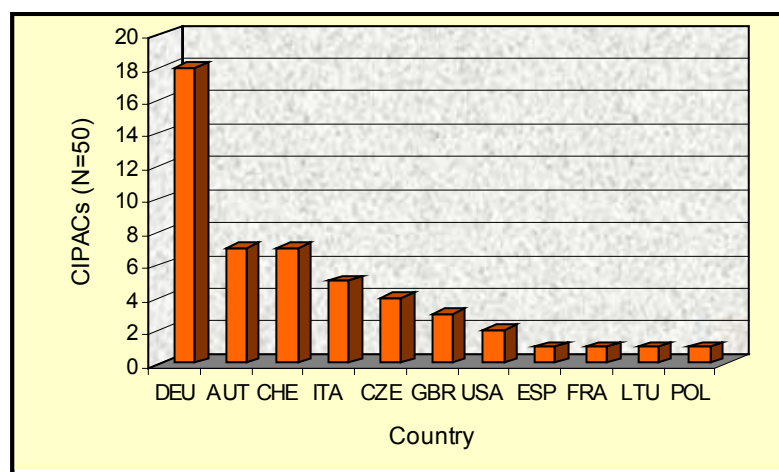


Fig. 2-18: Geographical distribution of CIPACs

- In *Germany* the *Chopin* system plays an important role, but several other software solutions are used as well. The earliest implementer was the Berlin Central and Regional Library that offered its first CIPAC in 1996 (even if only on an internal network).
- In *Austria*, the *Austrian National Library* (ONB) has played the leading role in CIPAC development and implementation. In fact, all but one of the Austrian CIPACs are based upon its *KatZoom* software package, presumably because it was made available to them at very reasonable cost.
- *Switzerland*: Only four of the seven CIPACs identified are *BerninaSpider* systems. Two libraries opted for the (German) *Chopin* system, and recently the Swiss National Library employed yet another system for the conversion of its classified catalogues.
- *Italy*: Some of this country's CIPACs are still experimental (Lunati, 2001, p. 9);<sup>43</sup> for example, the Florence Central National Library's project – to name the most prominent institution – is only a demo version and therefore not included in the inventory.<sup>44</sup>

<sup>43</sup> Nevertheless, the few implemented CIPACs have some interesting features certainly worthwhile looking at, and some of them are also good examples for tasteful and/or unusual web-page design.

<sup>44</sup> <http://www.bncf.firenze.sbn.it/progetti/palatino/home.htm>

- **Czech Republic:** CIPACS were identified in four libraries. In terms of software and technology used, they are all different; there are both commercial and home-made solutions. However, all four user interfaces are based on the "virtual drawer" approach.
- **United Kingdom:** Only recently, two major academic libraries adopted the technique. The software, originally developed by the Library of the LSE, was subsequently made available to the University of London Library.
- **United States:** Most probably, the Princeton University Library was the first library in the world that ever implemented a card-image public access catalogue on a large scale. Although the project was certainly successful, there has been remarkable little resonance in the USA. To the author's knowledge, only one other US library has employed the technique.<sup>45</sup> On the other hand, the Princeton project definitely influenced the development of CIPACS in Europe to a great extent.

### 2.3.2 Growth and size

The growth of CIPAC implementations since the mid-1990s is depicted in Figure 2-19 that shows the cumulative number of CIPAC sites by year of implementation (of the first card-image catalogue per site). The curve illustrates that, after a cautious start, the take-off began only in 1999; more than two thirds of all CIPACS have been installed since.

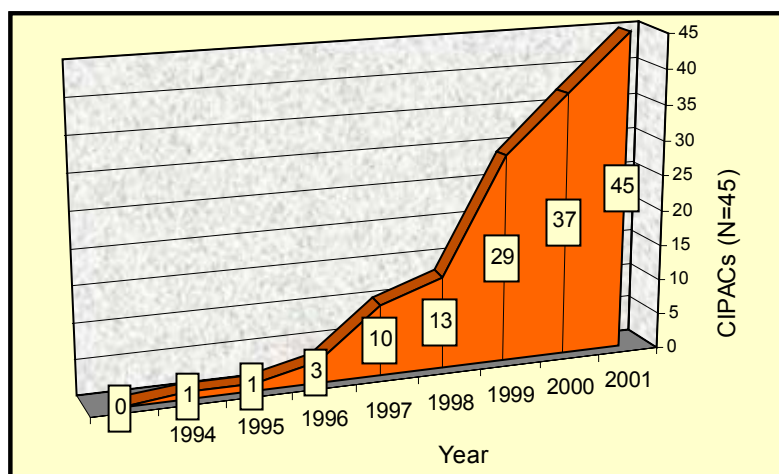


Fig. 2-19: Growth of CIPAC implementations, 1994–2001

Although it might not be justified to draw a trend line based on these data, one is inclined to hypothesize that in the next few years a further increase of the number of

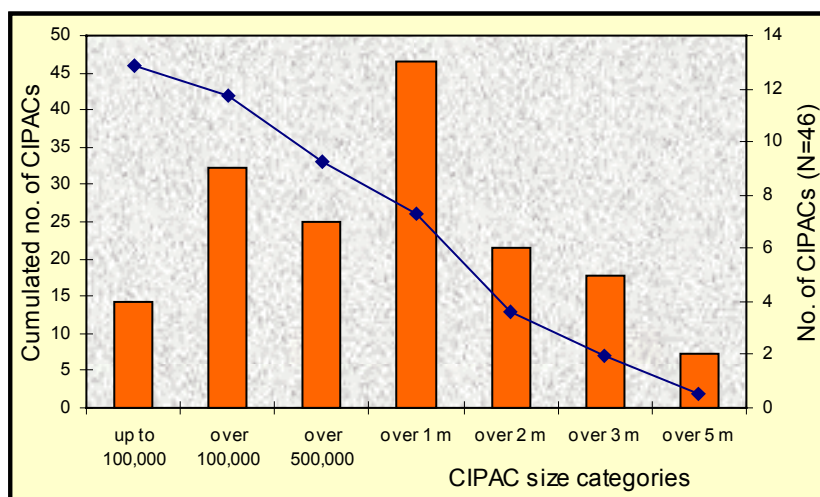
<sup>45</sup> It may well be that among the thousands of US libraries some more are using card-image OPACS; however, no mention of this has been found in the literature or on the WWW.

CIPACS can be expected – not only because some software manufacturers are advertising their products heavily.<sup>46</sup> Studies with a nation-wide focus such as one recently published in Italy (Lunati, 2001) have started recommending the technique as an appropriate measure for bringing greater numbers of bibliographic records onto the Internet. It also seems that among (academic) libraries the urge is growing to have records of *all* their holdings on the www.

Country	Location	Institution	Cards (approx.)
DEU	Frankfurt	HeBIS-Retro Union Catalogue	7,750,000
USA	Princeton	University Library	6,000,000
CZE	Prague	National Library	4,479,000
DEU	Halle	University and State Library	4,020,000
AUT	Vienna	University Library	3,928,000
AUT	Vienna	National Library	3,543,000
DEU	Kiel	Inst of World Economics	3,479,000
DEU	Hamburg	Inst of Internat'l Economics	2,855,000
CZE	Brno	Moravian Library	2,689,000
LTU	Vilnius	National Library	2,500,000
DEU	Berlin	Central and Regional Library	2,400,000
CHE	Zurich	Central Library	2,200,000
DEU	Munich	State Library	2,127,000

**Table 2-1: The largest CIPAC sites (2m+ cards)**

Table 2-1 lists the largest CIPAC sites, i.e. those where more than two million catalogue cards are available online. Of these 13 sites, 9 are based in German-speaking countries. The largest single card-image catalogue is offered by the University of Princeton Library.<sup>47</sup> At the present time, a total of approximately 75 million card-images is held online.



**Fig. 2-20: Size of CIPAC implementations**

<sup>46</sup> For example, adverts for *Chopin* are often to be seen in German LIS journals.

<sup>47</sup> If the HeBIS-Retro Union Catalogue is considered as several databases (see Appendix A1, CIPAC no. 25).

For the diagram shown in Figure 2-20, the 46 CIPAC sites for which data are available were grouped into seven size categories according to the number of card-images held online. The largest category is "over 1 million" (and under 2m) card-images which applies in about one fourth of all cases. As the cumulative curve indicates, about half of the CIPAC sites are holding one million or more card-images online. On the other hand, only four institutions are dealing with just up to 100,000 images which possibly can be regarded, by and large, as the "lower limit" for sensibly implementing a CIPAC.

### 2.3.3 Software used for CIPACs

Figure 2-21 gives a picture of the software presently used for CIPACs which can be described as rather scattered. Both commercial (c) and non-commercial (n/c) systems are used for CIPACs, and although it seems that the German commercial product, *Chopin*, has a somewhat dominating position, there is a large number of other (presumably) commercial software solutions as well. The same is true, just on a slightly smaller scale, for non-commercial or in-house solutions.

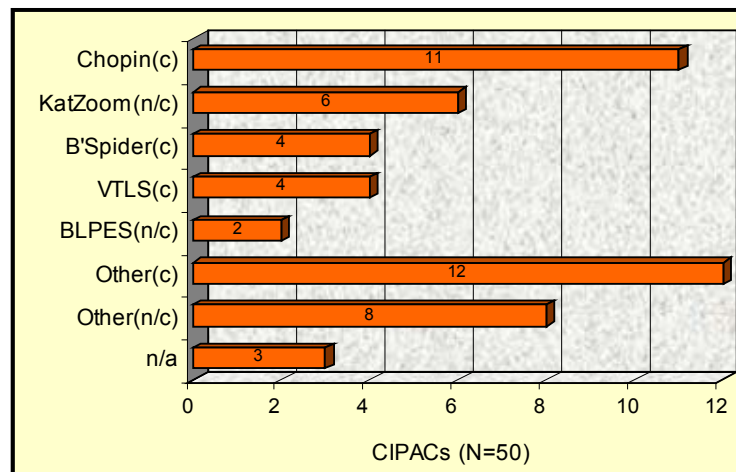
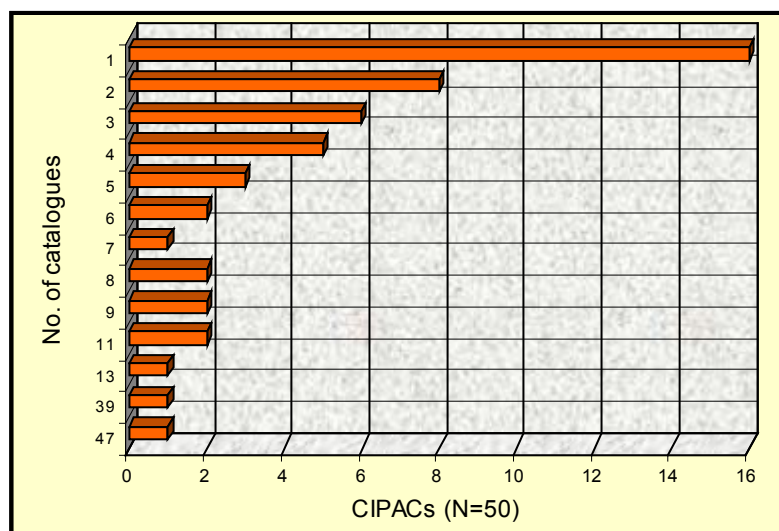


Fig. 2-21: Software used for CIPACs

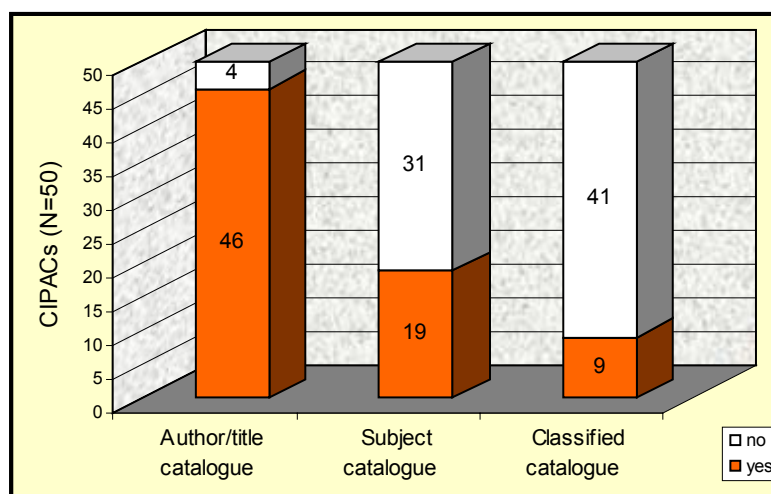
### 2.3.4 Number of catalogues

Most CIPAC sites offer only a very small number of card-image catalogues (Figure 2-22). In 50 percent of all cases this number is one or two. On the other side of the scale, there are only a few institutions that use the CIPAC approach for a large number of (mostly smaller) catalogues.



**Fig. 2-22: No. of catalogues per CIPAC implementation**

As Figure 2-23 illustrates, all but four CIPAC sites offer one or more author/title catalogue(s).<sup>48</sup> Subject catalogues and classified catalogues have been converted into CIPACs only in 19 and 9 cases, respectively (with almost no overlap). This probably reflects the actual catalogue situation in the libraries concerned, but might also be seen as an indication of the lower status traditionally given by libraries to subject searching.



**Fig. 2-23: Catalogue types converted into CIPACs**

### 2.3.5 Processing and index creation

Optical character recognition has not played a major role in CIPAC creation yet, as only in 8 of 50 cases this technique was applied (Figure 2-24). On the other hand, most CIPACs are using (manually created) indexes for browsing, mainly based on headings

<sup>48</sup> Princeton's dictionary catalogue was counted both as author/title and as subject catalogue.

and/or leader cards, and not so often on drawer labels. Other indexes (classification tables etc.) were also created in some cases.

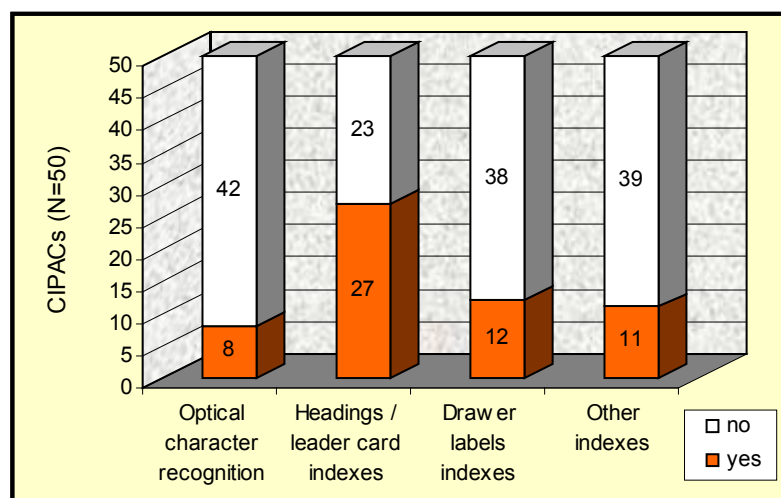


Fig. 2-24: OCR processing and index creation

### 2.3.6 Navigation

Accordingly, browsing of (partial) indexes is the most common method of navigating in CIPACs (Figure 2-25). Binary searching is not so often used (mainly on *KatZoom* CIPACs), and neither is searching of fields (author, year, etc.) and/or keywords (full texts) which is restricted mostly to OCR-based systems. In a few cases, the texts of the browse indexes were made searchable by keywords ("limited" field/keyword searching).

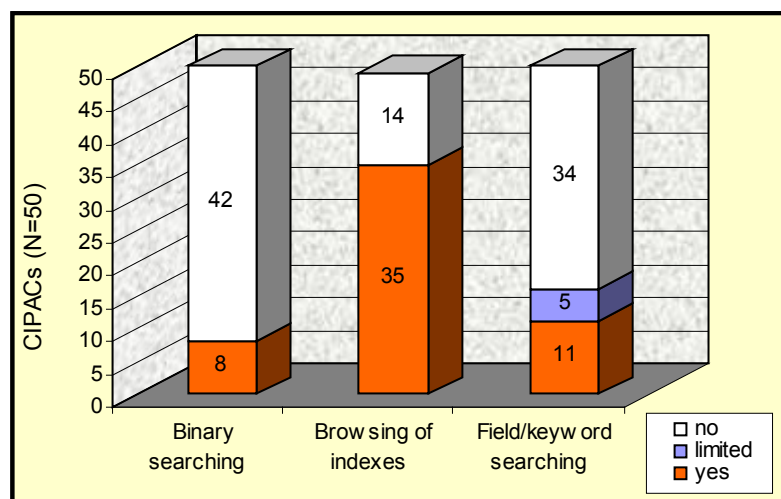
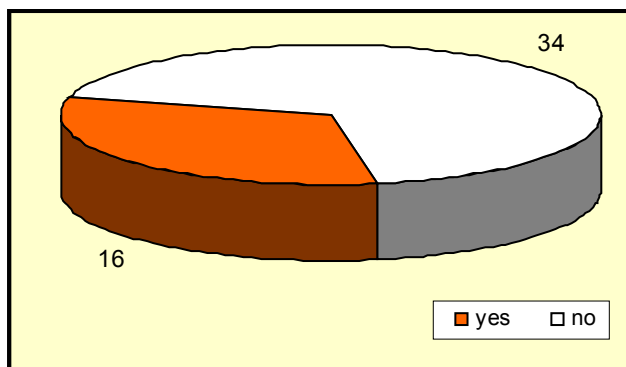


Fig. 2-25: Features for searching of CIPACs

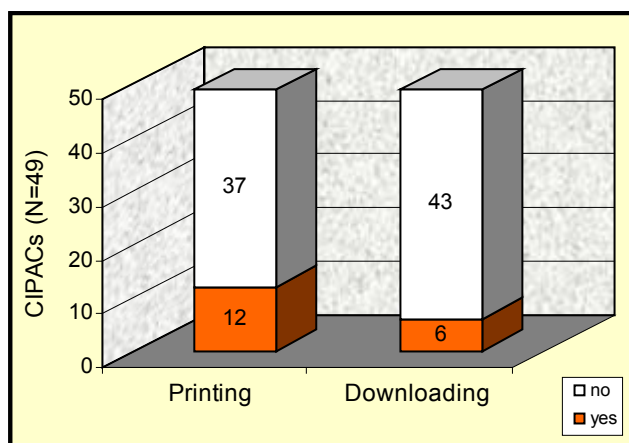
A feature present on a rather small number of CIPACs is a component for ordering documents online. The number given in Figure 2-26 indicates that about one third of the 50

CIPAC sites are offering such a feature. However, this does not mean that when several catalogues are offered as CIPACs, all of these will feature online ordering, so that the true percentage (based on catalogues rather than sites) is even smaller. As it seems justified to assume that most users approach online catalogues not only to search but also to access library holdings, this fact is somewhat surprising.



**Fig. 2-26: Features for document ordering**

Likewise, printing and downloading of results (card-images) are important for many users. However, only a rather small number of CIPACs supports this explicitly by their user interface (Figure 2-27). This is mainly true when the software uses a Java applet or plug-in for the visualization of the card-images. Obviously, printing and/or downloading can be achieved in many other cases as well (not counted here) just by using the local browser's functionalities. However, this depends on the individual browser used and may not be taken for granted in every case.<sup>49</sup>



**Fig. 2-27: Features for printing/downloading**

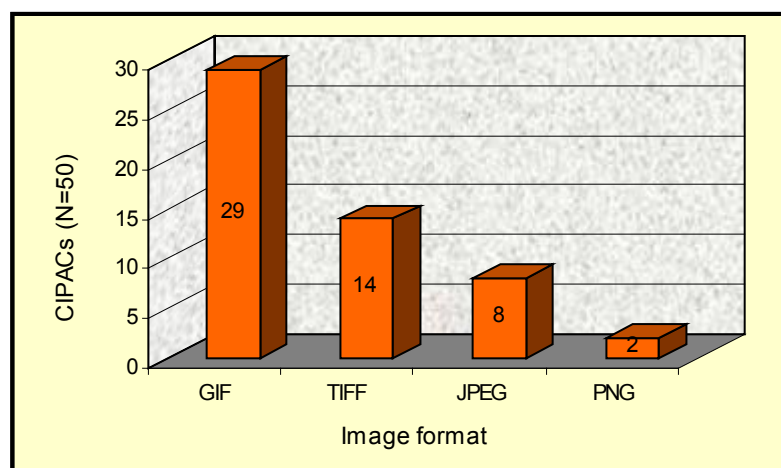
<sup>49</sup> For example, not all browsers can print out easily a card-image that is displayed in a new window.



Other navigational features such as displaying the search history or collecting several images in a "basket" (for printing/downloading them together), exist in solitary cases only.<sup>50</sup>

### 2.3.7 Card-images

The majority of CIPACs make use of the GIF format for the display of the card-images (Figure 2-28). In about one third of the cases the images are shown in TIFF format by means of some Java applet or plug-in. The JPEG format is employed by only a relatively small number of CIPACs, and the (new) PNG format by hardly any of these catalogues.<sup>51</sup>



**Fig. 2-28: Image formats used**

Practically all CIPACs display black and white images of catalogue cards; the only CIPAC with colour images is to be found at the Uffizi Gallery Library (Florence).<sup>52</sup>

Only in a minority of cases, cropped images are used for a short display of results (Figure 2-29). In most CIPACs the users are shown a full image straight away. For moving to other images of the result set, techniques for jumping forward or backward are widely used (including both options such as  $\pm 5/10/50$  cards and jumping directly to a particular card by entering its number). In almost half of the cases, some sort of picture enlargement is supported, often by flexible zooming (in and out the card-image). When Java applets or plug-ins are used, other techniques for image manipulation (rota-

<sup>50</sup> Search history: Göttingen; basket: Heidelberg (Appendix A1, CIPACs no. 26 and no. 30, respectively).

<sup>51</sup> See, for example, Arah (2000) for an explanation of bitmap standards.

<sup>52</sup> See Appendix A1, CIPAC no. 44. As mentioned at the end of Appendix A1, two other catalogues (demo/in-house) feature colour images as well.

ting the image, inverting the colour, etc.) are sometimes supported as well. In about a quarter of the cases, the users are offered the opportunity to change the resolution of the images in order to improve the quality of the display.

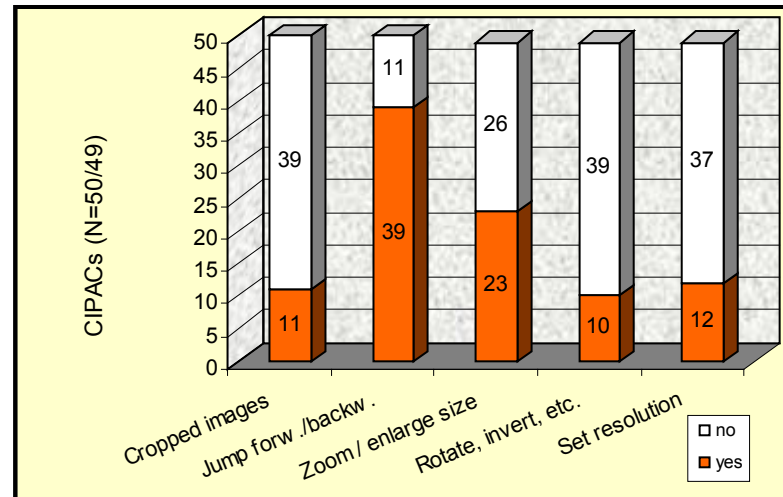


Fig. 2-29: Features for image navigation

### 2.3.8 Other features

The great majority of CIPACs offer at least some sort of online help; only in 6 cases there is practically no such help at all (Figure 2-30). For the purpose of this study, the online help found on the various CIPAC web-sites was categorized (in a simplifying and obviously subjective way) into four commonly used size groups (S, M, L, XL). As the figure illustrates, most help systems fall into the small or medium categories, even if there also several longer or maybe even lengthy varieties.

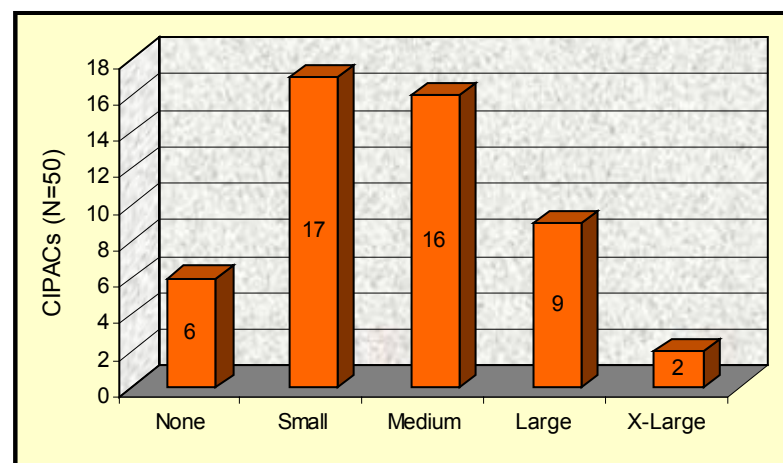
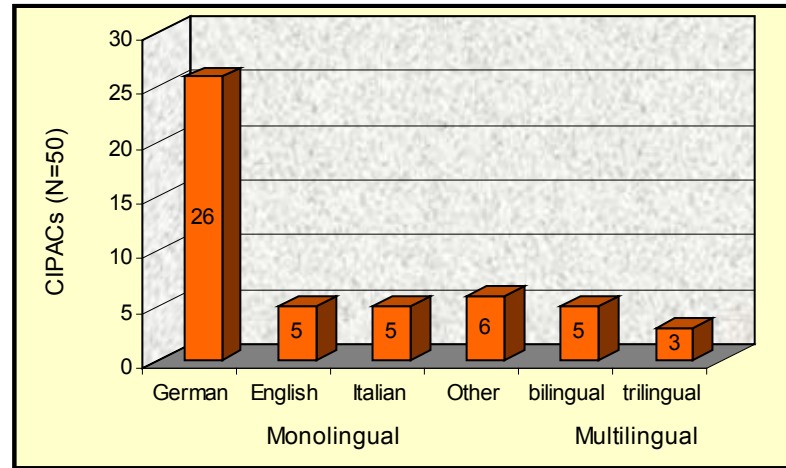
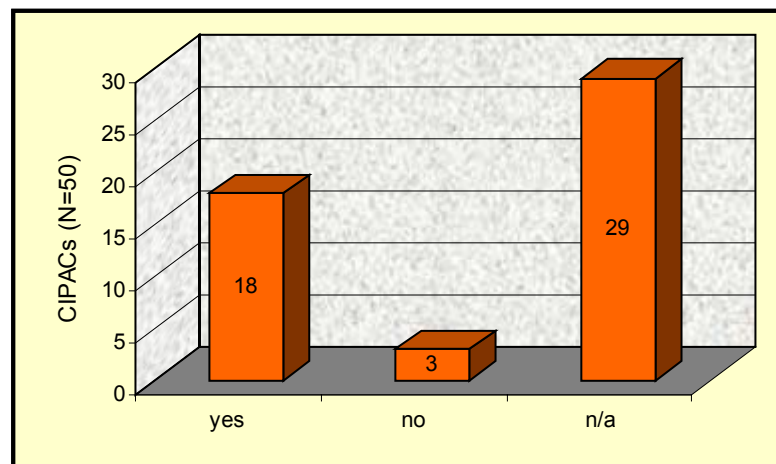


Fig. 2-30: Size of online help



**Fig. 2-31: Language of CIPAC interface**

Figure 2-31 shows that the user interface of most CIPACs is in only one language which is mainly German and in some cases English or Italian. Relatively few CIPACs are in two or even in three languages.



**Fig. 2-32: Availability of administrative tool**

Finally, it was also recorded whether or not the various CIPAC systems are equipped with some sort of administrative tool or editing module that makes it possible to delete individual images, to make corrections or amendments, to change the sorting sequence or even to insert new cards. However, relatively often no such feature was explicitly mentioned in the available sources, so that the resulting picture remains rather incomplete (Figure 2-32). Only in three cases it became evident that *no* editing tool exists, whereas many CIPACs seem to have at least some of the capabilities mentioned above.<sup>53</sup>

<sup>53</sup> As in some of the remaining cases a software product is used that does include an administrative tool (as mentioned in the description of some other CIPAC but not necessarily purchased by all customers), it may well be that this number is in fact much higher.

### 3 Problems and issues in CIPAC implementation

In this chapter, the main problems and issues involved in the creation and implementation of CIPACs are identified and discussed. It is based upon more than half of the CIPACs depicted in the previous chapter,<sup>1</sup> and primarily on two sources of information:

- the *CIPAC Library Questionnaire* (CLQ), and
- relevant project literature (reports, articles, papers, information sheets).

23 libraries (of 38 that had been contacted)<sup>2</sup> returned a CLQ and for 20 CIPACs some kind of project literature was available. Because of the overlap between the two types of sources the following account is based upon statements on 28 CIPACs.<sup>3</sup> In addition, some information from CIPAC web-pages was used, as well as some other literature.

#### 3.1 Reasons for establishing CIPACs

The results of the CLQ confirm that the four aspects listed in the questionnaire, namely

- cost-effective / moderately priced method
- relatively fast way of converting a card catalogue
- savings in space (getting rid of card cabinets)
- universal access to the catalogue via Internet/www

were indeed the most important reasons why the respective libraries chose the CIPAC approach for the conversion of their card catalogues. It seems that cost, speed and universal access were about equally important (applying in most cases), whereas the space saving factor – although sometimes a crucial aspect – was, by and large, slightly less significant.

Another motive that was mentioned repeatedly is catalogue preservation, especially when old catalogues existed only in one copy and the digitization of the cards was also regarded as a measure for data security. Only in a few cases each of the following reasons were mentioned: Improving catalogue searching; the only choice in the case of

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<sup>1</sup> 50 CIPACs plus the "future" CIPAC of the Federal Maritime and Hydrographic Agency of Germany (for which a LCQ with useful information was received).

<sup>2</sup> As mentioned in Chapter 1, only institutions with CIPACs known of by mid-2001 were sent a CLQ. The questionnaire is included as Appendix B1.

<sup>3</sup> For details see Appendix B2.

handwritten catalogues; public relations; good experiences of other libraries; digitization as the groundwork for a "real" conversion.

### 3.1.1 Cost

Undoubtedly, the creation of a CIPAC is less expensive than "real" retroconversion, but the difference in cost is not so easy to determine. Practically all sources claim that CIPACs are *considerably* cheaper; in some cases they were described as "the only affordable" or "the only financially feasible" way of converting the card catalogues into an online format. When comparisons with other conversion methods were made, the estimates varied between "twice the price" (of using unskilled staff or students) and "ten times the price" (of a professional retrospective conversion).

<b>Location</b>	<b>Institution</b>	<b>Cost (€)</b>	<b>Cost factors included</b>	<b>Source</b>
Vienna	Nat. Library	3,634.-	scanning	Dikovich (2000)
Vienna	Univ. Econ. L.	7,267.-	not specified	CLQ
Zurich	Central Lib.	25,613.-	'complete solution' (not specified)	Anon. (1997b)
Brno	Moravian Lib.	7,632.-	scanning, hardware, software, external staff	CLQ
Prague	Nat. Library	11,346.-	scanning, implementation	CLQ
Prague	Parliamt. Lib.	13,609.-	scanning, implementation(?)	CLQ
Berlin	Central Lib.	11,504.-	scanning, software, internet connectivity, security filming, setting up server	Rönsch (1998), CLQ
Frankfurt	HeBIS-Retro	12,526.-	scanning, OCR, categorization, project management, quality control, database loading, online ordering module	Dugall (2001)
Halle	Univ. Library	5,420.-	not specified	CLQ
Hamburg	Mar. Agency	11,003.-	scanning, indexing, 'additional cost', software	CLQ
Heidelberg	Univ. Library	5,537.-	scanning, indexing	Dörpinghaus (1998)
London	BLPES	11,136.-	scanning, additional server capacity, inhouse staff time	Price (2000)
Bologna	Archiginn. L.	10,329.-	scanning (front/back), indexing	Lunati (2001)
Florence	Marucelliana	10,866.-	'complete solution' (not specified)	Lunati (2001)

**Table 3-1: Comparison of CIPAC costs, per 100,000 cards (in Euros)**

Some more concrete cost figures are also available, both from the project literature and the CLQ. However, these figures are rather difficult to compare, because they vary with regard to (a) the cost factors covered (e.g. in-house costs are often not included), (b) kind of CIPAC (e.g. a binary search system does not need an index), (c) currencies (some of which may have fluctuated over the years), and (d) time (eg. scanning may have become cheaper during the past few years). Generally, they are not very precise either (e.g. in most cases it remains unclear if VAT – which also differs from country to country – is included or not). Nevertheless, in order to provide at least some kind of

overview all these figures were converted to Euros<sup>4</sup> and standardized for a CIPAC size of 100,000 cards. The results of this attempt are given in Table 3-1 that also indicates which cost factors were covered by the respective figures.

In spite of all the shortcomings mentioned above, the table does indeed reflect the cost differences between the relatively cheap *KatZoom* system (Vienna), the systems with indexes or virtual drawers, and the rather expensive *Spider* system (Zurich). It also leads to the assumption that the actual cost for an average partial index or virtual drawer system can be estimated at somewhere in the region of €11,000.- for 100,000 cards, or 11 Eurocents<sup>5</sup> per card (VAT not included).

	Cost (€)		
<b>External (89.8%)</b>	11,248.-		
		4,090.-	scanning (36.4%)
		7,158.-	OCR processing, data transformation / categorization (63.6%)
<b>Internal (10.2%)</b>	1,278.-		
		447.-	project management (35%)
		288.-	quality control (22.5%)
		224.-	database loading (17.5%)
		319.-	development of online ordering module (25%)
<b>Total cost</b>	12,526.-		

**Table 3-2: Cost factors for *HeBIS-Retro*, per 100,000 cards (in Euros)**

Even the costs for the more sophisticated *HeBIS-Retro* system are about in the same region. The somewhat higher figure includes more cost factors, as shown in Table 3-2. It is interesting to note that the cost figure given for scanning (€0.041 per card) is roughly comparable with the one shown for the Austrian National Library in Table 3-1 (€0.036), whereas Price (2000) reports a much higher amount (€0.099) for the scanning of the BLPES' card catalogue by a UK company.

### 3.1.2 Speed

Many CIPAC libraries felt the need to have *all* their catalogue records available electronically *as quickly as possible*. Card-image online catalogues can indeed be created and made available over the world-wide-web in a very short time.<sup>6</sup>

<sup>4</sup> For this exercise, the conversion rates published on 20/03/2002 were used. Figures originally given in British pounds, Czech crowns, and US dollars may have led to slightly higher or lower costs in Euros if currency rates from a different day would have been used.

<sup>5</sup> Approx. 7 UK pence.

<sup>6</sup> For example, the (small) Graz University of Arts Library needed for scanning of its less than 50,000 cards and the development of its simple, home-made browsing software only five months (CLQ). Within more or less the same period of time, the (large) Austrian National Library managed to scan and

Of all activities related to CIPAC creation, *scanning* – even of large numbers – of catalogue cards seems to be the speediest task. The Theological Library at Innsbruck scanned its 190,000 cards within two weeks (CLQ); the Federal Maritime Agency at Hamburg was twice as fast: 350,000 cards were done in only one week (CLQ). Quality control, creating the database, setting up the server, testing the CIPAC – all this takes much longer (e.g. in the case of the Hamburg Agency about half a year). Large institutions such as the Austrian National Library and the Berlin Central and Regional Library scanned their catalogues in daily batches of 40,000 to 60,000 cards (Dikovich & Wilhelm, 1997; Rönsch, 1998). If done off-site, scanning obviously requires more time, as in the case of the Bavarian State Library which shipped over two million cards in five batches from Munich to Berlin (Haller, 1997), or the University of London Library that dispatched its 540,000 cards in batches of 50,000 for scanning (for which five months were planned; CLQ).

Pietzsch (2001a) points out that *OCR processing* is more time-consuming as one might expect. On average, per image (=catalogue card) seven seconds are required for reconstructing the text with OCR software on a Linux system. In the case of the Heidelberg University Library, more than three months (in day and night shifts) were needed for OCR processing of 1.2 million cards. At the Zurich Central Library, 100,000 cards were scanned and OCR read per week (Anon., 1997b), which is about the same speed.

Complex solutions such as *HeBIS-Retro* take more time. The conversion of eight large catalogues (about 8 million cards) took about three years, plus an additional year for a public tender and various test installations (Dugall, 2001). Nevertheless, this can still be considered as fast when compared with "normal" conversion. For example, Wicke (2000) reports that at the Dresden University Library six professional librarians (FTE) converted 266,000 records (350,000 volumes) in seven years, and Sosna (1997) estimated that his 1.5 FTEs at the Czech Parliamentary Library would need more than ten years for converting 200,000 volumes. According to Pietzsch (1998a), a full retrospective conversion (probably recataloguing)<sup>7</sup> of one million cards would have required between 50 and 100 person-years, whereas the conversion of the same catalogue into a CIPAC was achieved within a few months.

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load 2.5 million cards onto their self-developed *KatZoom* system (Dikovich & Wilhelm, 1997; Dikovich, 2001b), and even the huge CIPAC at Princeton University was set up within only one year (Henthorne, 1995).

<sup>7</sup> In the case of old German catalogues there is also the issue of converting PI-based cards into RAK-based records which often cannot be done without having the item being catalogued to hand.

### **3.1.3 Access**

Putting a card catalogue "on the Internet" or, correctly, the WWW, means to make it accessible universally, i.e. independent of location and time (e.g. a library's opening hours). However, not all institutions that created CIPACs had done their original planning with the web in mind. In about a quarter of the cases, solutions on in-house networks were first considered and/or implemented (one library even thought of microfiche first), but sooner or later replaced by web-based CIPAC solutions. When it was first released to the public, the Princeton CIPAC was to be used on dedicated workstations, which were equipped with a special image viewing software, on a campus network (Henthorne, 1995). This was probably the obvious thing to do in 1993/94; however, in the second half of the 1990s the reluctance of some libraries to opt for a web-based solution straight from the beginning is more difficult to understand. Nevertheless, for the majority of libraries the Internet/WWW was an absolute pre-requisite and the only option ever considered.

### **3.1.4 Space**

In many cases the aspect of saving space by removing the old card catalogue(s) was an important reason for opting for a quick CIPAC solution. Most libraries suffer continuously from a shortage of space, and those that actually removed their card cabinets after the CIPACs went online gained at least one large room that could be used for other purposes (often for OPAC workstations). In some cases, the libraries moved to new or refurbished buildings and aimed at getting rid of their old cabinets on that occasion (e.g. Kiel, Dresden, London School of Economics).

What happened to the old card catalogues? In most of the cases they were removed from the reference section but kept in some other place (off-site, stack area, basement, depository, etc.) Only in a few instances the old catalogues were actually destroyed; e.g. at the Berlin Central and Regional Library the cards were "pulped" some time after the CIPAC had been introduced (Rönsch, 1998; CLQ). At the Austrian National Library the removal of the public card catalogues had caused some criticism by users and even the press (CLQ); later a rather unusual solution was found: The catalogue<sup>8</sup> was first exhibited at the Museum of Applied Arts in Vienna; later the newly discovered "object

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<sup>8</sup> 84 wooden cabinets with over 3,000 drawers



of art" travelled, in spite of its ten tons, to various museums in Austria, Germany and the Czech Republic (Schnelling, 1999).<sup>9</sup>

### **3.1.5 Preservation**

In many cases, even when libraries wanted to get rid of the old catalogues, the creation of CIPACs was seen as a measure of catalogue preservation. For example, Stoklasová mentions that in the case of the Czech National Library's general catalogue the "cards themselves are historical artefacts and, as such, must be preserved" (1999, p. 8). At the Austrian National Library the only copy of the old subject catalogue had been exposed (unprotected) to the public for many years, so that the CIPAC was considered a security copy (Dikovich & Wilhelm, 1997). At Dresden the last security filming of the author/title catalogue had been made in 1942 so that a new one was urgently needed (Golsch & Simmich, 1999). Several other statements of this kind were found in the CLQs and the literature. Therefore, two (sometimes overlapping) aspects regarding security and preservation can be noted:

- the creation of a digital copy (CIPAC) makes it possible to remove an endangered old catalogue;
- the process of CIPAC creation leads to the availability of a security copy of the catalogue (either on CD-ROM or on roll film).

## **3.2 Deciding about the kind of CIPAC**

When a library decides to create a CIPAC, immediately the question arises what kind of CIPAC one plans to establish. What features will this catalogue have? What kind of browsing mechanism, what kind of image display, will online ordering be available? What software will be used, and should it be a commercial solution or a self-developed one? All these questions are not only interrelated but also depend on factors such as budget considerations, the kind of catalogue to be converted, and local aspects (e.g. the availability of a programmer in the library), to mention just the most significant ones.

When in 1992 the Princeton University Library was looking for a vendor that could supply a turnkey solution for its planned CIPAC, it was not so easy to find a suitable one (Henthorne, 1995). Even today, the CIPAC software scene is rather scattered;<sup>10</sup> there are

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<sup>9</sup> Maybe this is less unusual than it seems, as it has been noted that "literary library lovers have always lavished nostalgic affection on catalogs in the popular press, revering card catalogs as works of art and the major intellectual achievement of librarians" (Cox, Greenberg & Porter, 1998, p. 59).

<sup>10</sup> See also section 2.3.3

far too many software solutions for a rather limited market, many of them home-made and/or installed only on one or two sites. Nevertheless, today libraries do have a choice when looking for CIPAC software, even if the number of commercially offered products is limited. In many cases the preference of certain features will still directly imply what software is to be used. For example, previously a library that wanted a probabilistic search of OCR read full-text of the catalogue cards had no choice other than the *Spider* system; other software of this kind was developed only recently (Pietzsch, 2001b).

The following table shows the reasons for the selection of the CIPAC software as mentioned in the CLQ and/or the literature:

good experiences of other libraries with this software/this company	6
system has good features/capabilities	5
software developed by other library available at no/low cost	5
cost-effective system	5
<i>Spider</i> software would have been attractive but was too costly	4
most cost-effective solution was to develop system in-house	4
<i>Spider</i> (OCR) not possible because many cards handwritten	2
system is easy to use, user-friendly	2
same system is used nation-wide	2
turnkey solution, not much work by library staff required	2
developing it together with software house was best solution	2
software can be implemented quickly	1

**Table 3-3: Reasons for the selection of CIPAC software**

This table leads to the suspicion that reasons such as low cost and availability at nominal cost<sup>11</sup> were sometimes more important than the actual features for searching and navigating. In other cases it seems that the librarians concerned were impressed by a given CIPAC solution and decided they would like to have something like this in their libraries, too. If in the process of software selection any detailed project planning was undertaken this was rarely disclosed. An exception is the Saxony-Anhalt University and State Library at Halle whose project planning document (Schnelling, 1998) shows that the library had looked at some existing CIPACs and was able to describe exactly what software features were desired (p. 4):

- navigation via an index covering every 50<sup>th</sup> card
- browsing back/forth card by card
- temporary selection of a different stepwith (e.g. 10 or 20)

<sup>11</sup> For example, the fact that in Austria several institutions besides the National Library are using *Kat-Zoom* was certainly determined by the very low price at which they could obtain this software.

- an appropriate module for adding, altering, deleting of images
- a feature for adding to the index
- a feature for the registration of all changes made
- an indication what catalogue is being searched
- the display of approx. four preceeding and following index entries for navigation
- a feature for downloading images into a data file
- a printing option (to printer or to file)
- an online ordering feature (incl. printing out of borrower slips)

### **3.3 Technical aspects**

#### **3.3.1 Preparing the card catalogue**

With reference to the preparatory work in the library, Rönsch (1998, p. 1566)<sup>12</sup> in her account on the CIPACs at the Berlin Central and Regional Library succinctly states:

None. The reference catalogue was scanned as it was, straight from current use without any preparation, which means that sorting errors in the card catalogue are also reflected in the image catalogue. The division into three [catalogue sections] was kept.

Presumably, a very similar approach was used in other libraries, too. Even if the cataloguing rules would have allowed to merge consecutive catalogue divisions, this was normally avoided; the same is true for systematic revisions of the filing sequence. However, there are also cases where considerable preparatory work was undertaken before the catalogues were scanned. There are several tasks that need consideration and they can be categorized as follows:

- Improving / completing the existing leader cards for use as a partial index, e.g. when unevenly distributed (as in the case of Princeton; Henthorne, 1995) or when a subject CIPAC required a guide card structure of headings and subheadings (at Halle; Lutze, Schnelling & Worch, 1999);
- Creating indexes on the basis of drawer labels, leader cards, headings etc. (sometimes done by library staff);<sup>13</sup>
- "Cleaning" of the drawers, e.g. removing glassine covers, re-typing cards that are badly damaged or illegible (Henthorne, 1995);
- Removing duplicate cards (works that have already been catalogued for the OPAC); e.g. at Luzerne 4–5 person-months were needed for the removal of 450,000 cards

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<sup>12</sup> Originally in German (author's translation).

<sup>13</sup> See also section 3.3.5

(Niederer, 1999); at Göttingen 810,000 of the 2.3 million cards were removed<sup>14</sup> (Buschey, Halle & Harms, 2001);

- Checking the card catalogue for sorting errors (no evidence of realization).

### 3.3.2 Scanning and quality control

Scanning can be performed either by the *library itself* (i.e. its staff and/or additional helpers, e.g. students) or by *commercial firms* (scanning bureaux, software vendors). In the first case it will normally be done in the library, but in the second case it can be done either *on location* or *off-site* (e.g. in the premises of a scanning bureau).

When the Princeton University Library conducted its pioneering project, six million cards were scanned on the Library's premises by six purposely hired students who worked with three scanners in two shifts from 7:30 a.m. to 11:30 p.m. (Henthorne, 1995). The more recently created CIPACs were mostly scanned by commercial companies, especially in the case of the large libraries<sup>15</sup> – in many instances as part of a package that also included database creation and software. There is no clear pattern visible whether in-house or off-site scanning should be preferred; this obviously depends on factors such as space (is there enough space in the library where scanning can be done without disturbing the users?), time (how much longer will it take when large quantities of cards must be shipped to the vendor's premises?), security (is it the only copy of a valuable catalogue which cannot be given away?), and vendors' preferences (e.g. concerning quality control).<sup>16</sup>

Scanning is normally done with high-speed scanners at a speed of up to 60,000 cards per day, at a resolution between 200 and 400 dots per inch, most often at 300 dpi. For most CIPACs only the front of every catalogue card was scanned, sometimes even if there was also information on the back.<sup>17</sup> The resulting digital images are usually *bi-tonal*, i.e. black and white (rarely grey-scaled or in colour), in TIFF format, often of the *TIFF G4* (Group IV) standard.<sup>18</sup> According to Dikovich (1998), a 200 dpi black and

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<sup>14</sup> These cards were identified by means of optical recognition of a special ID number that marked them as printouts from electronic records.

<sup>15</sup> An exception is the Moravian Library that purchased its own scanner and hired external operators for scanning their approx. 2.7 million cards (CLQ).

<sup>16</sup> For example, of the eight catalogues that the Dresden University Library digitized, six were scanned in Berlin (the vendor's location) and two (the historical catalogues) on the Library's premises at Dresden (CLQ).

<sup>17</sup> For example, the Princeton catalogue had information on the back of only 20 percent of the cards, so that it was decided to scan only one side (Henthorne, 1995). Only a few CIPACs feature double-sided card-images, e.g. those at Bologna and Florence (see CIPACs no. 42 and no. 44 in Appendix A1).

<sup>18</sup> An explanation of these technicalities can be found in Lee (2001, chapter 3)

white card-image requires 6–7 KB of storage space. The images are normally supplied on CD-ROM (occasionally also on magnetic disk, DVD, roll film).

According to all available sources, quality control is a time-consuming task but crucial for the functioning of the CIPAC, regardless what navigation/retrieval software will be used.<sup>19</sup> Today, quality control is usually part of the package offered by commercial vendors, but library staff are often involved, too. Mainly two aspects need to be checked – image quality and completeness (Schäuble, 1996). *Image quality* refers to the legibility which must be equivalent to the original card. Although at 300 dpi this can be achieved without problems, as a result of the not yet perfect automatic feeding of the scanners a certain proportion of the images will depict only parts of the cards or will be skewed. *Completeness* means both the correct sequence of the images and the existence of an image for every catalogue card (sometimes cards stick together so that no scan is taken of the second card). According to Köstler & Schäuble (1998) the proportion of defective card-images should be kept under 0.01 percent, especially if optical character recognition will be applied; Dugall (2001) mentions an error tolerance of less than 0.5 percent.

### **3.3.3 Image standards and web browsers**

As mentioned above, scanners normally produce digital images in TIFF format which is the common standard for master images. However, the image formats suitable for web-browsers are GIF and JPEG, so that many digitization projects create GIF or JPEG files from their TIFF masters for the subsequent delivery via the web (Lee, 2001, p. 45-46). In the case of CIPACs there are basically two approaches for the transmission of card-images on the WWW (Braune-Egloff, 2000):

- Conversion of the TIFF images into GIF or JPEG format: This approach has been used in many CIPAC projects, but in the case of card-images the latter formats need more storage space than TIFFs; if the CIPAC system also requires images for a short view of results, cropped versions of these images need to be stored as well);<sup>20</sup>
- Alternatively, TIFF images can be transmitted and displayed in the browser by means of Java applets or plug-ins, i.e. software that downloads onto the browser and supports not only the display of the TIFF image but also its manipulation (setting the image size, zooming in/out, changing the resolution, the brightness and the contrast,

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<sup>19</sup> At Princeton, 15 students and 40 library staff were needed for quality checks of every fifth image, and many cards had to be re-scanned (Henthorne, 1995).

<sup>20</sup> The Moravian Library found an interesting way to avoid storing cropped images by displaying, for a short view, only the top 160 pixels of each image as the cell background of an HTML-table (CLQ).

rotating the picture, inverting the colours, printing the card-image and downloading/saving it on the user's local workstation). This approach saves storage space and bandwidth, and also helps to avoid problems of synchronizing two image databases in case any changes are made. However, the applets and plug-ins require the use of a recent web-browser version and possibly a number of browser adjustments by the user (activation of Java and JavaScript support, accepting cookies, enabling of printing with Java applets, etc.)<sup>21</sup> Some of these plug-ins may also come into conflict with other plug-ins installed on the PC or be incompatible with certain platforms (e.g. MacIntosh computers).

### **3.3.4 Optical character recognition**

At about the beginning of the "CIPAC area", Dietze (1995, p. 245) reported from a visit to the Library of Washington:<sup>22</sup>

Experiments involving scanned catalogue cards have not been successful; the tests have been stopped because when applying OCR the correct identification of individual characters proved too difficult. However, the main problem was that the categorization of the scanned cards was too complicated.

For the purposes of CIPACs, the first problem had already been solved in 1995, because the *Spider* software was being developed at that time;<sup>23</sup> the second problem was – again only for CIPAC purposes – solved more recently.<sup>24</sup>

As shown in section 2.3.3, only a relatively small number of the present CIPACs are based on *BerninaSpider* or similar software. Obviously, for these libraries the use of OCR was beyond question. The Berlin Senate Library also found a way of converting its author catalogue by OCR in order to integrate the text, after considerable manual corrections, into its "normal" OPAC (Lux, 1997). However, both from the CLQ and the literature it becomes evident that quite a number of other libraries also experimented with OCR but soon gave up because of poor results. They had found that their catalogues contained a proportion of badly recognizable cards (handwritten, badly printed and partly damaged cards, cards with a variety of typefaces) that was too high for obtaining reasonable results via OCR. In several cases OCR was also described as too expensive – some libraries just did not have the financial resources for this additional step,

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<sup>21</sup> Most *Chopin* CIPACs that use the Java applet approach come with a technical online help of considerable length that might not be fully understood by every user.

<sup>22</sup> Originally in German (author's translation).

<sup>23</sup> See also section 2.2.4

<sup>24</sup> *HeBIS-Retro* makes use of an automatic categorization technique; see also Appendix A1, CIPAC no. 25.

whereas others used "OCR" as a synonym for the *Spider* software which was considered too costly. The Austrian National Library, however, was lucky enough to possess two uniformly typewritten old catalogues (authors and subjects), converted them first to CIPACS and after some time, by using OCR, into one single OPAC.<sup>25</sup> Others mentioned that they had scanned their cards with a rather high resolution (300–400 dpi) in order to make any future OCR attempts easier (e.g. Buschey, Halle & Harms, 2001).

In a study preceeding the development of the *Spider* software, the developer group found that for the catalogue of the Zurich Central Library the OCR process resulted in a word accuracy of 67 percent, which means that one in three words in the catalogue sample was incorrectly recognized (Mittendorf, Schäuble & Sheridan, 1995; Schäuble & Sheridan, 1996). The main difficulties for OCR were (a) the large variety of languages of the catalogue entries, with many accented characters, and (b) the large number of proper nouns and abbreviations; in both cases automatic dictionary lookup is not feasible. Pietzsch (2001a, 2001b) mentions as the main problems for OCR (a) heterogeneous font face and font size, (b) amendments made on the cards (handwritten, different typeface), (c) varying degrees of blackness (from card to card, but also on the same card), (d) wear and tear (stains, dirt, mechanical damage), (e) variety of languages. Whereas Schäuble and Pietzsch make use of retrieval software with a high tolerance of errors, Dugall (2001) highlights the importance of quality control and describes various approaches for automatic quality checks and error correction used in the HeBIS-Retro project. He also states that the OCR process is much more difficult than the preceeding scanning step (p. 118).

### **3.3.5 Manual/intellectual input**

Both the *KatZoom* and the *BerninaSpider* CIPACS do not require manual or intellectual input for the creation of the respective CIPACS. When designing *KatZoom*, the Austrian National Library intended to keep things simple and decided to avoid the cost of index creation (Dikovich, 2000), an aspect which was also attractive for the other libraries that subsequently used that software (CLQ). The more sophisticated *Spider* system by definition does not require any manual work on the part of the library (except the preparation of the card catalogue for scanning).

The libraries using CIPACS with "virtual drawers" had to create indexes of the existing drawer headings and, in some cases, also of the headings of the original catalogue

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<sup>25</sup> See the case study in Appendix B4.

racks.<sup>26</sup> This was obviously not a very costly and/or time-consuming task and therefore also attractive for the institutions concerned. For example, the University of London Library originally considered a more sophisticated index but found that its creation would take too long and cost too much; when the Library later on was given the opportunity to use the LSE's home-made CIPAC software, a much simpler drawer label index was established (CLQ).<sup>27</sup> Table 3-4 shows a sample section of this index of 970 entries in total.

From	To	Drawer	Cards
W	WADDEL	916	266
WADDES	WAH	917	588
WAI	WALKE	918	611
WALKER	WALLACE	919	607
WALLACH	WALP	920	517
WALR	WAM	921	600
WAN	WARD	922	560
WARDA	WARR	923	567
WARS	WASHINGTON [1] CARNEGIE	924	468
WASHINGTON [2] CARNEGIE	WASHINGTON [3] INST	925	406
WASHINGTON [4] LIBRARY	WASHINGTON [5] MIDDLE	926	464
WASHINGTON [6] NATIONAL	WASHINGTON [7] SMITHSONIAN	927	297
WASHINGTON [8] SMITHSONIAN	WASHINGTON. B	928	395
WASHINGTON. G	WATKIN	929	329
WATKINS	WATS	930	386
WATT	WEA	931	523

**Table 3-4: A sample section of a drawer label index**

For the CIPACS featuring partial indexes, longer and sometimes more sophisticated files had to be created. In the case of the *Chopin* systems, this task was often performed by the vendor, especially for the author/title catalogues where the headings of every n<sup>th</sup> card (e.g. every 20<sup>th</sup>, 50<sup>th</sup>, 200<sup>th</sup>) were used as entries; in other cases (e.g. Princeton) the libraries created the indexes themselves. The latter was also true for subject CIPACS for which some libraries (a) keyed in classification schemes (Rönsch, 1998), (b) created new subject indexes to the classification scheme (Lux, 1997; Rönsch, 1998), (c) checked and enriched the index entries produced by the vendor (Braune-Egloff, 2000),

<sup>26</sup> For example, the CIPAC of the Czech National Library features indexes of the latter kind; see also Appendix A1, CIPAC no. 16.

<sup>27</sup> An ASCII version of this index was discovered by the author on the web; when made an Excel file this index is only 102 KB in size.



or (d) created subject guide cards of headings and subheadings which the vendor could then use for index building (Lutze, Schnelling & Worch, 1999). The CIPAC of the Heidelberg University Library – featuring a *full* (not partial) index – is based on the headings of *all* 1.2 million catalogue cards which were keyed in by a commercial bureau; by means of appropriate software this index was then also permuted in order to facilitate easier browsing of the "Prussian" headings (Pietzsch, 1998b). The most lavish manual input project was undertaken for the Bavarian State Library's CIPAC.<sup>28</sup>

### **3.3.6 Servers, databases, system architecture**

In the case of most CIPACs implemented by commercial vendors (*Chopin*, *Bernina-Spider*, and many individual solutions by various software houses) the server side of the system is just a "black box". Indeed, the libraries concerned need not worry about how their system is organized internally, all they usually need to do is provide / finance the hardware required for the server (usually a PC or workstation with sufficient memory and mass storage). The vendors themselves seem to prefer not to disclose the technological details of their systems. For example, the *Chopin* folder<sup>29</sup> informs just briefly on the components being used: Microsoft technology for Internet connectivity, ACCESS and SQL-Server for the databases, scripts in ASP and Java for retrieval, and Java applets for visualization. No information on the architecture of the *Spider* system is available either.<sup>30</sup> By contrast, the libraries that developed their CIPACs themselves had to deal with all technological details on the server side, and the two examples in Appendix B3 (Austrian National Library, Heidelberg University Library) may illustrate what goes on behind the scenes.

### **3.3.7 Administrative tools**

In the CIPAC context an administrative tool is a software module that enables the library to make various kinds of changes in the card-image catalogue. Not all CIPACs are equipped with such a module;<sup>31</sup> this applies not only to simple CIPAC applications<sup>32</sup> but

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<sup>28</sup> All drawer labels were keyed in by library staff; 21,000 guide card terms were merged into this index by the commercial firm that scanned the catalogue. The vendor was also commissioned to key in the text of all catalogue cards, partly categorized (author, title, year, and call number), partly as free text, with an accuracy rate of 99.95 and 99.5 percent, respectively (Fabian, 1997).

<sup>29</sup> [http://62.104.137.109/chopin/info/prospekt\\_chopin.pdf](http://62.104.137.109/chopin/info/prospekt_chopin.pdf)

<sup>30</sup> Internal documents describing these systems' architecture in detail will probably exist, but these were not accessible to the author.

<sup>31</sup> See section 2.3.8

<sup>32</sup> E.g. the home-made system of the Graz University of Arts Library (see Appendix A1, CIPAC no. 1)

also to some of the more sophisticated CIPAC solutions.<sup>33</sup> However, most CIPAC libraries that mentioned this issue in the CLQ and/or the literature seemed to be rather interested in such an administrative module. For example, the Halle project planning document contains three relevant requirements (Schnelling, 1998, p. 4):

- modifying, adding and deleting images at a later time must be supported by appropriate graphics tools;
- additions to the index must be possible (in case the Library wishes to index more images or even all images);
- all later modifications must be written to record files in order to make it possible that in case the database is rebuilt from the archive CDs the most up-to-date version can be restored again.

Of the wide range of possible applications of such an administrative module the following ones were mentioned most often:

- changing call numbers and/or locations, either by writing text onto the image (*Chopin*)<sup>34</sup> or by replacing the card by a newly written one (*KatZoom*);<sup>35</sup>
- putting "electronic stamps" on cards for which records have already been added to the "normal" OPAC; or (alternatively) deleting such cards from the CIPAC;
- replacing illegible or faulty cards by newly scanned or newly typed cards;
- changing the sorting position of images (in case of errors);
- correction of index entries (including characters not/wrongly recognized by OCR);
- making amendments to the index (e.g. by adding subject headings/subheadings).

### **3.3.8 Organizational aspects**

It has already been mentioned that CIPAC creation can be done completely in-house, or by out-sourcing various parts or even the whole of the project. There are cases where even the CIPAC system as such is operated by a vendor<sup>36</sup> or another institution.<sup>37</sup>

The part most often done by a service agency is scanning (and OCR processing), even in those cases where the libraries undertook most of the projects themselves (e.g. at Heidelberg University). Many other steps of CIPAC projects have been performed by exter-

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<sup>33</sup> E.g. the Bavarian State Library's CIPAC (Fabian & Haller, 1998, p. 187)

<sup>34</sup> E.g. Lüthi (2000)

<sup>35</sup> Österreichische Nationalbibliothek (1998)

<sup>36</sup> For example, the *BerninaSpider* CIPAC of the Luzerne Central and University Library is operated on a server of the *EuroSpider* company; the cost for this service is about €10,250.- per year (Niederer, 1999).

<sup>37</sup> E.g. the *KatZoom* CIPAC of the (small) Austrian Museum of Applied Arts Library is hosted on a server of the Austrian National Library.

nal firms as well. In some cases (e.g. *Spider* CIPACs, some *Chopin* CIPACs, Berlin Senate Library) the libraries preferred to hire a sole supplier in order to have the whole package – consulting services, project management, quality control, co-ordination, software and systems compatibility, and guarantee of conversion quality – supplied by the same company. It seems that unless such a full package was purchased, Perez' recommendation to use an external library or IT consultant for the validation of project planning and procedures (1998, p. 64), was hardly followed in any of the cases.

### **3.4 CIPACs and the peculiarities of old catalogues**

#### **3.4.1 Physical form of old catalogues**

Not all former library catalogues were typed on 7.5x12.5 cm or 3x5 inch cards. The older the catalogue the more likely it will be not only (partly) handwritten, but also

- on oddly shaped cards, slips or sheets (both in horizontal and vertical formats of different size);
- in the physical form of a sheaf catalogue (a batch of slips held together by some binding mechanism)<sup>38</sup> or a book catalogue (bound volumes with several or many catalogue entries per page).

Some of these older catalogues may not to be scanned as easily and by high-speed batch scanning techniques as drawers of standard sized catalogue cards. Book catalogues can be processed with special book scanners; the use of both a higher resolution (e.g. 400 dpi) and grey-scaling seem to be advisable (Angelus, Eichhorn-Berndt & Schnellling, 2000, p. 430). The University of Vienna Library's old book catalogue was not scanned from the original but from a microfiche version created in the 1980s (Dikovitch, 2000).<sup>39</sup>

Concerning navigation, it makes no difference whether a CIPAC is based on a sheaf catalogue or a card catalogue. In the case of book catalogues, things are more difficult, not only because the individual sheets are usually much larger but mainly because one sheets contains several or many catalogue entries. Two solutions exist so far:

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<sup>38</sup> Pieces of wood connected by screws, belts made of woven material, etc.

<sup>39</sup> This was possibly a cost-effective alternative but the image quality of this CIPAC must be described as not very good.

- *KatZoom*

The program version adapted for the Viennese book catalogue makes use of an index [!] based on the labels of the original microfiches, and works with a division factor of 3. On the selection of an index entry the system displays – horizontally – four cropped images, i.e. the first pages of three divisions of the range selected, plus the last page (Figure 3-1); the user is required to "zoom" into one of the three sections and repeat the dividing procedure until the cropped images of four successive pages appear. Subsequently, the page(s) containing the search term can be displayed in full view.<sup>40</sup>



**Fig. 3-1: A *KatZoom* book catalogue search**

- *Chopin*

A program version was developed for classified book catalogues such as the ones at Halle and Leipzig.<sup>41</sup> For these catalogues, the classification schemes were converted to textual databases with links to the matching catalogue pages. The users are presented the main classes and sub-classes and click through these levels of the classifications' hierarchies. Alternatively, they may also perform a keyword search of the class names. When a sub-class is selected, the top segment of the first page belonging to that class is visualized (Figure 3-2); the rest of the page can be viewed by means of horizontal and

<sup>40</sup> In GIF and/or TIFF format (an appropriate plug-in is required for the latter).

<sup>41</sup> See Appendix A1, CIPACs no. 28 and no. 33.

vertical scrollbars. The page section numbers on the left side of the display are used for online book ordering (for the proper identification of the book the users are required to enter this number in addition to the call number).

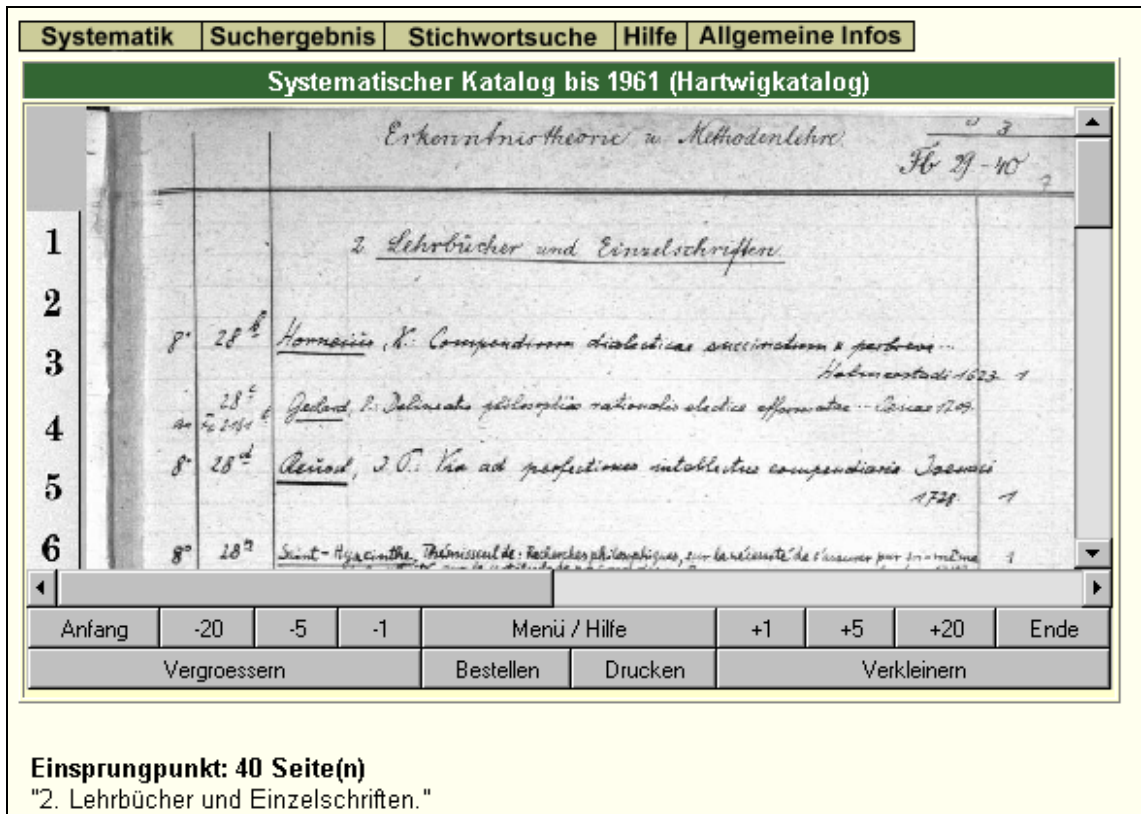


Fig. 3-2: Chopin at Halle – top of a page from the classified book catalogue

### 3.4.2 Old cataloguing rules

Whereas in the case of "normal" OPACs the users need not be concerned too much about the underlying principles and rules of cataloguing, the majority of CIPACs are as one-dimensional as the card catalogues on which they are based. This means that, in spite of the online accessibility of CIPACs, their users must have some basic understanding of the headings and the filing order used in the respective catalogues. Many CIPACs offer online help to explain such rules, sometimes at considerable length. However, most old catalogues are based upon rules for cataloguing and filing different from those used in the more recent past, so that the users of a CIPAC divided in chronological sections may easily be confused by a variety of such helpful recommendations. CIPACs in the German-speaking countries are affected worst because in many libraries the notorious "Prussian Instructions" (PI) were used – a set of rules developed in the 19<sup>th</sup> century, based on grammatical rather than alphabetical principles and originally not made for end-users but for scholarly librarians. The users of the former card catalogues never

understood the PI, the present younger generation of librarians does not know them anymore and it can be assumed that hardly any CIPAC user will wish to understand them. It is certainly a major criticism that some CIPACs are now carrying these idiosyncratic rules far into the online age.<sup>42</sup>

Simple CIPACs such as those of the *KatZoom* type are more affected by such old rules than others because their only access points are the letters of the alphabet – then it is up to the user to understand the filing sequence. In the case of systems that work with drawer labels or partial indexes some "repair work" can be done when the system is set up. An example is given by Fabian & Haller (1998, p. 173-174) who describe the making of the drawer labels index for the CIPAC of the Bavarian State Library:<sup>43</sup>

- as the letters "I" and "J" were interfiled, drawer labels containing either were also keyed in with the other spelling, e.g. "JMM" (a cross reference for a journal title) was supplemented by "IMM" (in order to find "Imm, Emil"); when using the index the user may learn that these characters have the same sorting value;
- as many personal names were filed phonetically rather than alphabetically (e.g. Schmid, Schmied, Schmidt, Schmitt – all in one sequence), drawer labels containing such names were supplemented by additional index entries (e.g. "Schwarz, Ber..." by "Schwartz, Ber...").

### **3.4.3 Legibility of old cards**

Legibility as a parameter of image quality has already been mentioned above. In this context, there is a second aspect of legibility that may affect some of the German and Austrian CIPACs, because in these countries on some of the handwritten catalogue cards the Kurrent script (Old German Script)<sup>44</sup> was used which many of today's librarians and library users will not be able to read. An example of such a card is given in Figure 3-3.

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<sup>42</sup> There are no corporate author entries; works of corporate bodies or those with more than three authors are filed under a grammatically determined title heading (e.g. the book "Hundert Jahre Technische Hochschule Darmstadt" is filed under the heading "Darmstadt Jahre Hundert"); letters such as "I" and "J" are interfiled (even in subject catalogues); the sorting of personal names is incomprehensible without a good knowledge of the rules; etc.

<sup>43</sup> For this library's old catalogue the Old Munich Rules had been used (similar to the PI).

<sup>44</sup> See also <http://www.germanscript.com/history.htm> [accessed 27/04/2002]

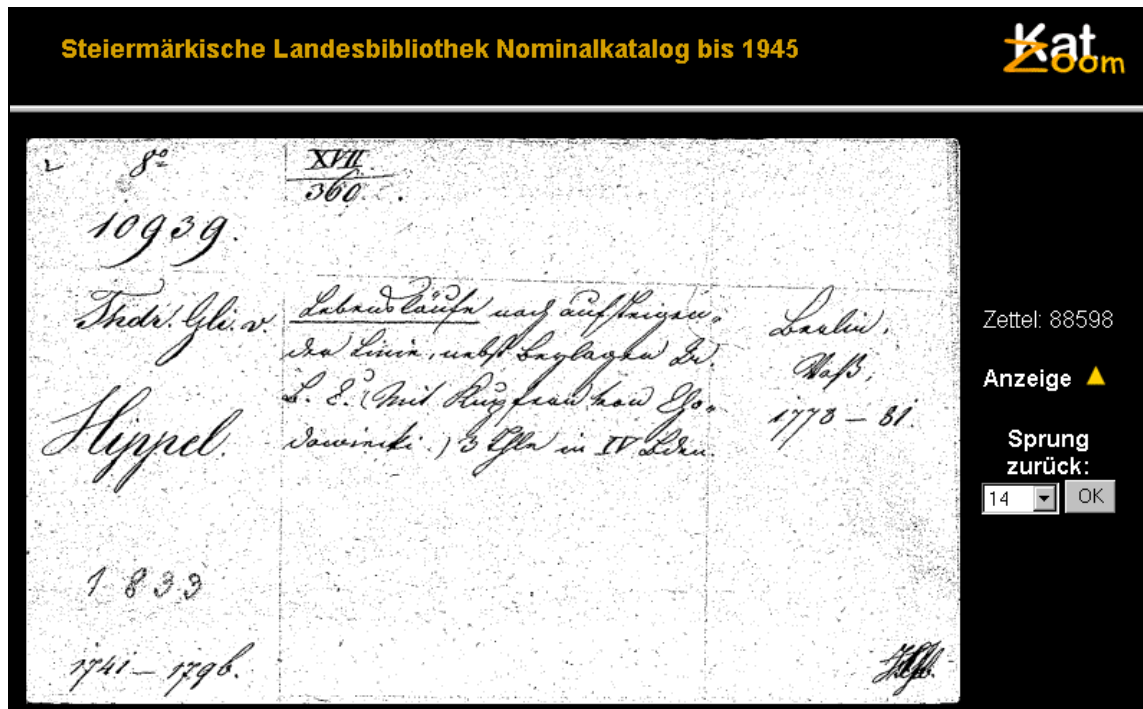


Fig. 3-3: A handwritten card, partly in Old German script

### 3.5 Presenting the CIPAC to the users

#### 3.5.1 Naming the CIPAC

When the Princeton University Library created the first major CIPAC, this previously unknown kind of reference tool was presented to the users as the "Electronic Card Catalog", but later on its name was changed to "Supplementary Catalog" in order to emphasize the fact that more and more cards were added to the OPAC and some of the information in the CIPAC might be outdated.<sup>45</sup>

digitized/digital/scanned/electronic/online (version of) card catalogue	16
(card/author/subject/library/old) catalogue until/before 19xx	15
image catalogue	10
scanned/digitized catalogue	5
web index, online card index	2

Table 3-5: Terms/phrases used for naming CIPACs on library web-pages

<sup>45</sup> However, "Formerly known as the Electronic Card Catalog" was added as a subtitle, presumably because it was the more meaningful name.

Unlike in the case of "normal" OPACs<sup>46</sup> no standardized terminology for CIPACs has been established yet. Therefore, it is not surprising that on library web-pages quite a variety of different terms is used for pointing/linking to CIPACs. These terms and phrases, as taken from the web-pages of all CIPAC libraries known so far, can be categorized as shown in Table 3-5. Only a few libraries created acronyms for their CIPACs, such as *KatZoom* (Vienna), *DIKAT* (Luzerne), *DigiKat* (Heidelberg), *IPAC* (Berlin), or *Card-PAC* (Dortmund). As these acronyms are meaningless without an explanation, they are usually also accompanied by one of the terms or phrases listed in Table 3-5.

As shown in the table, often the term *card catalogue* is used, together with some adjective that indicates that the digital form (and not the conventional one) is referred to.<sup>47</sup> Another frequently used type of expression refers to the period of *chronological coverage* rather than to the electronic form (e.g. Author catalogue until 1994). In a number of cases, the rather vague term *image catalogue* is used, particularly in German-speaking countries (spelled as "Image-Katalog" or "Imagekatalog"), whereas some other libraries named their CIPACs just *scanned* or *digitized* catalogues (without mention of the cards), which is not exact either.

Most libraries do not bother to further explain these names, some of which must be rather confusing for inexperienced library users, by giving more information (except maybe in a separate CIPAC online help file). Only in a minority of cases, some sort of helpful mini-description is provided, e.g.

- "an electronic copy of the former card catalogue, comprising digitized facsimiles of the catalogue cards" (University Library, Freie Universität Berlin);<sup>48</sup>
- "just a copy (image) of the conventional original catalogue cards which were scanned" (Leipzig University Library);<sup>48</sup>
- "an online database of images that replicates catalog card indexes to selected library and archival collections"; "... contains a separate image for each catalog card" (Library of Virginia).

A few libraries also hint that their CIPACs are temporary catalogues for the time being, i.e. until all records will have been added to the OPAC. Practically *all* of them fail to ex-

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<sup>46</sup> These are normally presented on web-pages as the *Online Catalogue* or the *OPAC* (even in German-speaking countries, and often without explaining the acronym to the users), sometimes simply as the *Library Catalogue* or the *Main Catalogue*.

<sup>47</sup> The term *card catalogue* without such a specification is often used for links to web-pages that explain the libraries' (old) card catalogues, but normally not for CIPACs.

<sup>48</sup> Originally in German (author's translation).



plain *why* this conversion method was chosen (e.g. cost, speed), thus leaving their users in the dark about why CIPACs exist alongside OPACs anyhow.

### **3.5.2 Integration of CIPACs into OPACs and web-pages**

Most CIPACs are not integrated with the libraries' "normal" OPACs at all; normally, they only share with them a web-page with links to the various online catalogues (and sometimes databases) provided by the library. Most CIPACs do not even resemble their OPAC counterparts in terms of page design and layout.

One of the few exceptions is the *Chopin* CIPAC at Freie Universität Berlin that was designed to match the "corporate identity" of the University Library as also expressed in the other library web-pages, even if the CIPAC and the OPAC are not integrated yet (Braune-Egloff, 2000).<sup>49</sup> Most other CIPACs were not brought into line with the graphic design of their libraries' web-sites.

Only in a few cases the term "integration" does apply:

- *Zurich Central Library*: From the outset this library planned to offer simultaneous searching of the CIPAC images and the OPAC of the Swiss Union Catalogue (Köstler & Schäuble, 1998). The *Zurich BerninaSpider* CIPAC is also linked with the Library's automated circulation system.<sup>50</sup>
- *Bavarian State Library*: The CIPAC is a module of the general OPAC; when the user clicks on a "drawer" icon the combined drawer labels and leader card index appears and CIPAC browsing can start. As the text of the cards was also typed in the reader may, alternatively, search the OPAC and, in case the full display shows a "view card" button, request the image to be shown. The CIPAC part of the system is not connected to the ordering/circulation module, but as all images also have a text record in the OPAC this is not necessary.

A few other libraries also plan some sort of integration, either with the OPAC's circulation module (e.g. Luzerne; Niederer, 1999) or with its user interface (e.g. Freie Universität Berlin, Berlin Central and Regional Library), but by and large one cannot diagnose a trend into this direction.

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<sup>49</sup> See Appendix A1, CIPAC no. 20 (Fig. A-5).

<sup>50</sup> See section 2.2.4 and the figures there.

### 3.5.3 What do CIPAC libraries know about CIPAC users?

Most CIPAC libraries who returned the CLQ reported that their CIPACs were well received by the users (the rest said that their card-image catalogues had only just been released so that no feedback could be collected yet). However, practically all of these statements rely on subjective impressions, on the reactions of individual users, some email messages received from users, and other kinds of selective observation. So far, no attempts have been made to record user reactions to CIPACs systematically (e.g. by conducting a user survey).<sup>51</sup>

Some libraries reported on various kinds of problems that individual CIPAC users had, e.g. with (old) browsers, plug-ins for image display, slow system and/or network performance, legibility of cards, difficulties with navigation or even with working on a computer in general,<sup>52</sup> whereas others mentioned that special instructional sessions were offered when their CIPACs were released. Only one library responded to the author's request (made in the CLQ) for relevant data and/or material; this was the Austrian National Library which provided a portfolio of collected complaint book entries, press cuttings (mostly readers' letters), email feedback etc. From this collection it becomes visible that some users were not happy with the *KatZoom* type of navigation (too cumbersome, no options for text searching) while others welcomed the accessibility of the old catalogues without the former restrictions (location, time). The majority, however, just lamented – often quite emotionally – about the removal of the card catalogues and made pleas for bringing them back to the Library's reference area.

Even if, generally speaking, CIPAC libraries do not know much about the users of their card-image catalogues, they seem to monitor whether their CIPACs are used at all, because in a number of cases figures were reported on the frequency of use (based on web-server statistics and similar counting mechanisms). For example, often 1,000 users or more search the CIPAC of the Czech National Library per day (CLQ), and 500 the one of the Heidelberg University Library (Pietzsch, 2001b); the statistical data that were used for the diagram in Figure 3-4 were provided by the Austrian National Library.<sup>53</sup>

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<sup>51</sup> The only library that mentioned a user survey was the Berlin Senate Library; however, in this survey the users rated only "facilities for searching" and "web-pages/OPAC" (CLQ).

<sup>52</sup> Austrian National Library/*KatZoom*: In some short views (cropped images) the headings of the cards are not visible (CLQ); Berlin Central and Regional Library/*Chopin*: Only every 200<sup>th</sup> card was indexed; some users believe that an author is not in the catalogue if his/her name does not appear as an index entry (CLQ); Luzerne Central and University Library/*BerninaSpider*: Professional users (librarians) believe it is faster to search the card catalogue (CLQ) and some readers found the subject catalogue difficult to search (Niederer, 1999).

<sup>53</sup> For the purpose of its web statistics, the ONB defined 10 calls of the underlying program scripts as one CIPAC query (Dikovitch, 2002).

This diagram shows for both CIPACS (author/title catalogue, subject catalogue) a pattern that reflects the typical ups and downs in an academic year,<sup>54</sup> but, more interestingly, it indicates that the subject catalogue is used quite consistently at about half the frequency of the author/title catalogue.

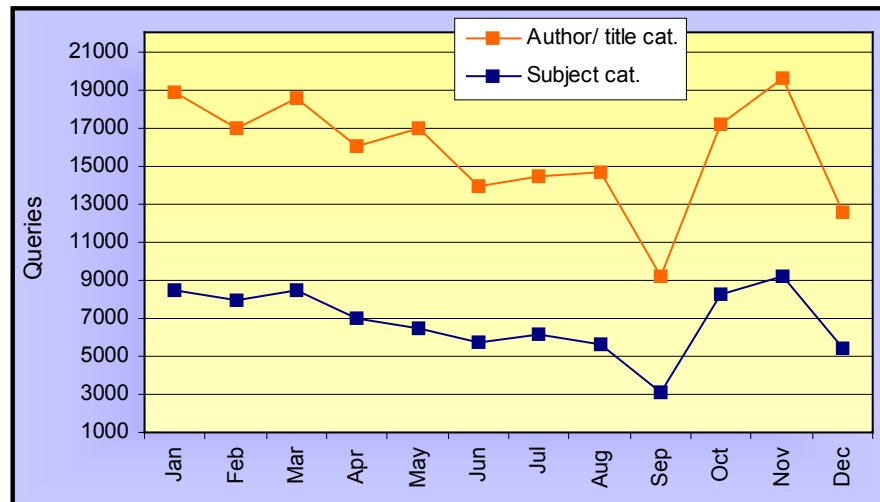


Fig. 3-4: CIPAC use at the Austrian National Library in 2001

### 3.6 CIPACS: Interim or permanent solutions?

Finally, the question arises what future CIPACS will have. Are they only a transient phenomenon or will they last for a longer period of time? In order to find out the view of the CIPAC libraries the question was asked in the CLQ whether they considered their CIPACS as

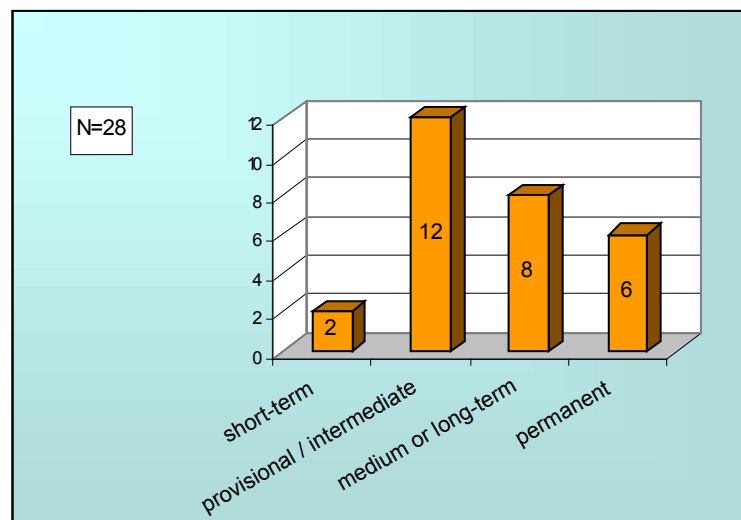
- a short-term solution (or even a makeshift solution)
- a provisional solution / intermediate stage in a long-term conversion project
- a medium or long-term solution
- a permanent solution

Also, the project literature was scanned for judgements concerning this issue; the results are shown in Figure 3-5.

The *short-term* category applies to only two libraries that expect to complete the full conversion of their main catalogues as early as in 2003 (BLPES and Austrian National Library). Of the others, the largest group considered their CIPACS as *interim solutions* for the time their other conversion activities (in many cases already ongoing) will take. However, some of these libraries mentioned that they were not sure how long this will

<sup>54</sup> Including the Library's vacation period in September.

take and if sufficient funds will be available, so that their CIPACs might become *medium* or *long-term* solutions. As most of those who chose the latter category had a similarly skeptical view one could actually merge these two into one group of libraries who expect that their CIPACs will stay for a while even if they should become obsolete at some time in the future. Some of the larger libraries with several catalogues in CIPAC format mentioned priorities concerning conversion speed so that some of their CIPACs would probably disappear sooner and others later (or never). The relatively small group of libraries that considered their CIPACs as *permanent* were rather confident that this was the best or most realistic solution for their catalogues.



**Fig. 3-5: Estimation of the future of CIPACs**

In reality, so far only one library has withdrawn card-image catalogues: The first two CIPACs of the Austrian National Library "lived" their short lives only from 1997 to 2000; then they were converted again and merged into one OPAC.<sup>55</sup> Although they still exist somewhere behind the scenes, the public can no longer access them on the www. The next CIPAC to be closed might be the one at Princeton; the intention to do so was already announced in 2001 (because of the completion of the Library's conversion project) but has not been carried out so far.

<sup>55</sup> See the case study in Appendix B4.

## **4 User reactions to CIPACs: An exploratory empirical investigation**

This chapter reports on the *CIPAC user survey*, a web-based investigation of users of card-image public access catalogues conducted as part of the present dissertation and presumably the first such study ever undertaken. As mentioned above, hardly any of the libraries that returned the CLQ had looked systematically at the reactions of their users to the provision of the respective card-image catalogue(s), nor has any study of this kind been mentioned in the literature.

### **4.1 Aims and objectives**

The aim of this survey was to learn about the awareness, the behaviour and the opinions of CIPAC users, in order to gain some basic insight into the way they feel about and deal with this unusual type of OPAC.

The objectives of the user survey were to collect information, by examining an indicative group of such users, about aspects such as the frequency of use, their familiarity and problems with navigation, the use of CIPACs in comparison with their predecessors (card catalogues) and present-day "normal" OPACs, more specific features such as options for subject searching and circulation/loan, as well as their general (emotional) view of card-image catalogues. It was expected that the findings would contribute to the formulation of hypotheses on CIPAC reception and use.

### **4.2 Methodology**

From the outset it was clear that the methodological approach had to be exploratory rather than descriptive (quantifiable) or explanatory (discovering causal relationships). A survey of the latter kind would have required a large representative sample and sophisticated (professional) survey techniques – both far beyond the intended scope of this dissertation. Besides, it would have been difficult if not impossible to define and identify the target population for a representative sample of CIPAC users. Also, given the fact that so far all that is known about CIPAC users is based upon the personal impressions of relatively few librarians and a number of email messages and entries in complaints books, it was felt that an exploratory survey was just the appropriate kind of investigation to undertake:

An exploratory survey, often conducted as qualitative research, can increase the researcher's familiarity with the phenomenon in question, it can help to clarify concepts, it can be used to establish priorities for future research, it can identify new problems, and [...] can be used to gather information with practical applications (Powell, 1997, p. 58–59).

#### 4.2.1 Options for an exploratory survey

Originally, it had been envisaged to conduct personal, qualitative interviews of a small "purposive sample" (Trochim, 1999) of CIPAC users, preferably experienced rather than novice users, students and/or academics rather than librarians, and users with a humanities background (as CIPACs tend to cover older literature). Ideally, end-users knowledgeable about more than one type of CIPAC were regarded to be the most promising target group. However, after various attempts to identify a reasonable number of such individuals<sup>1</sup> it became evident that this approach was simply not feasible.

The alternative was to undertake a web-based survey of CIPAC users that were to be recruited via newsgroups, mailing lists or other electronic bulletin boards – an approach that has become quite familiar in the last decade. The sample, in this case, would be of the "accidental, haphazard or convenience" kind, which is, in spite of its shortcomings, still "one of the most common methods of sampling" (Trochim, 1999). Accordingly, the method of asking questions would have to be a more structured one, as open, unstructured questions do not really lend themselves to self-administered questionnaires. Also, the size of the sample, which in the case of a web-based survey cannot really be pre-determined, was expected to be larger than in the case of personal qualitative interviews.

In order to gain some basic information and ideas for both the CLQ and the user survey, an extensive personal interview was conducted with the creator of the Austrian National Library's *KatZoom* software (Dikovich, 2000). During this talk the idea emerged to recruit respondents by means of a link to the web-questionnaire on the ONB's CIPAC-web-page rather than by the usual asking for participation through newsgroup messages etc. This idea was pursued further by including the following question into the CLQ:

Would you possibly agree to support my work by creating a temporary link (a clickable icon) on the web-page of your card-image OPAC that would point the users of your catalogue to a questionnaire that will be used for my dissertation?

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<sup>1</sup> Several of the heads of the historical and philological branch libraries in the University of Vienna were asked for their assistance but were not able to identify suitable candidates for such interviews.

By the end of January 2001, eleven libraries from four European countries had agreed to participate in the user survey by implementing such links on their CIPAC-webpages:<sup>2</sup>

Austria	Vienna	Austrian National Library
	Vienna	University of Vienna Library
	Vienna	Vienna University of Economics and Business Administration Library
	Innsbruck	University of Innsbruck Faculty of Theology Library
Czech Republic	Brno	Moravian Library
	Prague	National Library of the Czech Republic
Germany	Berlin	Berlin Central and Regional Library
	Berlin	University Library, Freie Universität Berlin
	Halle	Saxony-Anhalt University and State Library
	Heidelberg	Heidelberg University Library
Switzerland	Berne	Berne City and University Library

**Table 4-1: Libraries participating in the user survey**

#### 4.2.2 Topics in the survey

By the end of December 2000, a list of topics to be dealt with in the survey had been established, together with a provisional operationalization of these concepts (i.e. the specification of the kind of questions to be asked in order to cover the respective concept).<sup>3</sup> This list included the following:

1. Characteristics of the respondent
2. Frequency and purpose of CIPAC use
3. Familiarity with CIPACs
4. CIPACs versus original card catalogues
5. CIPACs versus "normal" online catalogues
6. "This CIPAC"<sup>4</sup> versus other CIPACs
7. Subject access
8. Interface to circulation/loan module
9. Integration of the CIPAC into the general web-OPAC
10. General evaluation of the CIPAC approach
11. Thanks for filling in the questionnaire and space for any further comments

The first list of topics and operational phrases was then further amended and modified. Item 9 was completely dropped, mainly because none of the participating libraries was

<sup>2</sup> Several other libraries would have liked to participate, too, but either returned their questionnaires too late or were sent the CLQ only after the web-based survey had already started. The latter were libraries not known to be offering a CIPAC when the CLQ was sent out first, or libraries that implemented their CIPACs only in 2001.

<sup>3</sup> This document is reproduced as Appendix C1.

<sup>4</sup> The term "this CIPAC" refers to the card-image catalogue of the library that a given respondent would be thinking and talking about.

offering an interface of this kind.<sup>5</sup> Other items were slightly shortened in order to avoid the final questionnaire becoming too difficult or too long.

### 4.2.3 Questionnaire design

The next step was the design and creation of the questionnaire, of which versions in three languages were required. The original version was written in English – not only for inclusion into the present dissertation, but also for being used in the fieldwork.<sup>6</sup> This version was subsequently translated into German<sup>7</sup> and into Czech.<sup>8</sup>

The actual creation of the questionnaire relied in many respects on the recent book *Mail and Internet Surveys* (Dillman, 2000), particularly on

- the principles for *writing* survey questions,
- the principles for *constructing* the questionnaire,
- the suggestions for *surveys on the World-Wide-Web*.<sup>9</sup>

### 4.2.4 Implementation

After the questionnaire had been drafted it turned out that the Vienna University of Technology Library (UBTUW) would support the survey by letting the author use its web-server and by providing disk space there.<sup>10</sup> This made it possible to implement several library-specific versions of the welcome screen and the questionnaire. Instead of referring to the respective institutions and their CIPACS by using the somewhat clumsy expression "this library" now the actual names of the libraries could be used in the questionnaires. Also, a new question could be added to the first part of the questionnaire, naming the respective library's CIPAC(s) and asking about its/their importance for the respondent – primarily as a means for drawing the person's attention to the right catalogue. Furthermore, it became possible to cut out several questions which were not

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<sup>5</sup> It had been hoped that the Bavarian State Library and/or the Zurich Central Library – these libraries offer CIPACS integrated with OPACS – would participate in the survey, but, unfortunately, neither responded to the CLQ.

<sup>6</sup> The English version was needed for the Czech National Library.

<sup>7</sup> This version (translated by the author) was used for all participating libraries with exception of the Moravian Library.

<sup>8</sup> The translation into Czech by the Moravian Library is gratefully acknowledged. The Czech version was also used for the Czech National Library (alongside the English and the German versions).

<sup>9</sup> For details see Appendix C2.

<sup>10</sup> The helpful support by UBTUW is gratefully acknowledged.



relevant in the versions for the Freie Universität Berlin Library and the Berlin Central and Regional Library.

In order to enable transfer of the answers to each filled questionnaire into (library-specific) result files on the web-server, a corrected and amended version of a PERL script published by the American Library Association (Ward, 2000) was implemented on the UBTUW's web-server. The first questionnaire to be implemented on the server was the one for the Austrian National Library. After it had been made sure that both this questionnaire and the PERL script were fully operational, the questionnaire was pre-tested by a small group of fellow librarians and academics.<sup>11</sup> As a result, several questions had to be re-written and some answer categories were amended. Also, a few errors in the underlying HTML-code were found and corrected. After the final version had been established,<sup>12</sup> the welcome screens and questionnaires for the other participating libraries were completed.<sup>13</sup>

In the meantime, all participating libraries had been sent the web addresses to which links on their CIPAC pages were to be implemented. Also, appropriate animated icons in three languages were designed and sent to the libraries, the majority of which actually used them on their web-pages.<sup>14</sup>

#### **4.2.5 Fieldwork and out-turn**

Field work started on 4 February 2001 with the Moravian Library as the first to become operational. Within the following eight days, all other participating libraries had built in the links to the respective welcome screens on the UBTUW server in Vienna, so that by 13 February all questionnaires were fully operational. After the first two or three weeks, it became visible that the maximum weekly out-turn would be in the region of 40 usable questionnaires – an interesting result insofar as it had been absolutely unclear what to expect. During fieldwork, a number of regular tasks were performed: Weekly statistics of the questionnaires received per library were created and also sent to the participating libraries; empty and duplicate questionnaires were identified and removed from the result files; data were saved both on the web-server and locally. The overall

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<sup>11</sup> From the Austrian National Library, the University of Vienna and the Vienna University of Technology.

<sup>12</sup> The English version of the questionnaire is reproduced as Appendix C4.

<sup>13</sup> The implementation of the Czech versions was obviously difficult and the author gratefully acknowledges the fruitful co-operation with both participating libraries from the Czech Republic.

<sup>14</sup> Some libraries used them as they were, some eliminated the animation, while others used textual links. For an example see Appendix C5.

impression was that users did not have problems with handling or sending the questionnaires, and that the degree of (deliberate) misuse was rather small. In order to reach the amount of 300 (or more) completed questionnaires, the period of fieldwork was extended over Easter, and finally ended by 17–19 April 2001. The final out-turn was 320 usable questionnaires.<sup>15</sup>

#### 4.2.6 Data analysis

After the end of fieldwork, the library-specific result files<sup>16</sup> were merged into one large file, with an identifier for the respective libraries as an additional variable. This file was imported into *MS-Excel* where several checks were performed, and, in some cases, empty cells corrected. From Excel, lists of the answers to the open-ended questions were printed which were used for analyzing and categorizing of these answers;<sup>17</sup> the new categories were then manually inserted into the data matrix.

*SPSS 10.00 for Windows* was used for the computation of frequencies, means and cross-tabulations.<sup>18</sup> For the latter, both newly defined (type of CIPAC, index of CIPAC expertise) and re-categorized variables (main subject area) were used.<sup>19</sup> The resulting output files were re-imported into Excel in order to produce diagrams, or into MS-Word for the creation of tables.

### 4.3 Findings

#### 4.3.1 Characteristics of the "sample"

As mentioned above, a total of 320 questionnaires was used for data analysis. However, as shown in Table 4-2 below, the coverage of the participating libraries was rather uneven. About a quarter of all questionnaires returned were concerned with the CIPACS of

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<sup>15</sup> The term "response rate" that is normally used in the survey literature refers to the proportion of returned questionnaires to those sent or given out, so that in the present context the term "out-turn" seems the more appropriate term. – A tabular summary of the total and weekly figures by library is included as Appendix C6.

<sup>16</sup> These were UNIX text files with a tabulator set for each variable.

<sup>17</sup> Appreciation is given to the colleagues from the Czech libraries who readily translated the Czech answers to the open-ended questions into English.

<sup>18</sup> In the present case of a non-probability sample, tests of statistical significance are not justified and the author therefore resisted the temptation of letting the powerful SPSS compute such tests.

<sup>19</sup> See section 4.3.2 below.

the Austrian National Library, almost as many with those of the University of Vienna Library, and still a relatively large number with those of the Czech National Library. Even if factors such as where and how noticeably the links were placed on the individual libraries' CIPAC web-pages may have contributed to this result, it is certainly justified to assume the *overall frequency of use* as the main factor causing this response pattern.<sup>20</sup> Nevertheless, in the present context these numbers are not really important, because it was not the aim of the study to collect data representative for the individual libraries.

	No. of questionnaires	
Library	Austrian National Library (ONB)	79
	University of Vienna Library (UBW)	73
	National Library of the Czech Republic (NKP)	48
	Heidelberg University Library (UBH)	28
	Berne City and University Library (SUB)	25
	Moravian Library (MZK)	22
	Saxony-Anhalt University and State Library (ULB)	16
	University Library, Freie Universität Berlin (FUB)	15
	Univ. of Innsbruck Faculty of Theology Library (IHS)	9
	Berlin Central and Regional Library (ZLB)	3
	Vienna Univ. of Econ. & Business Adm. Lib. (WUW)	2
	Total	320

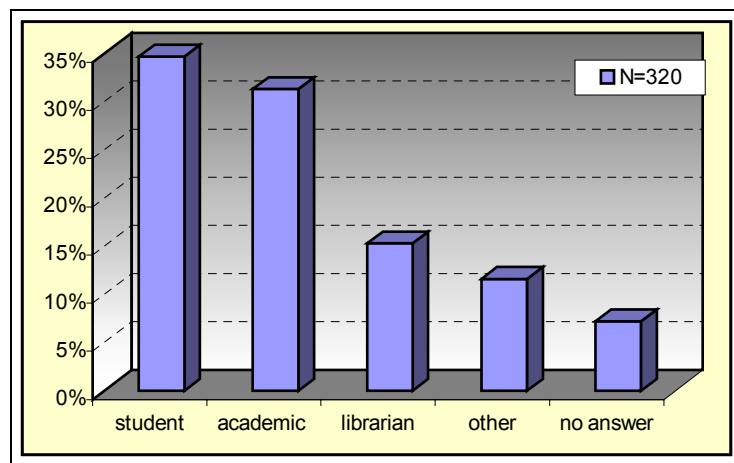
**Table 4-2: Questionnaire coverage of participating libraries**

One of the main characteristics of the respondents is the fact that they were, to a great extent, frequent users of CIPACs. It had been an unforeseeable risk of this survey whether or not many accidental or first-time visitors to the various CIPACs' web-pages would be inclined to fill in the questionnaire. Fortunately, this was not the case, as 63% said that they used the respective CIPAC(s) "often" or even "very frequently", whereas only 10% were first-time users. This variable will further be dealt with in a separate section (4.3.3).

Only a few questions were asked on "demographics". Variables such as age, sex, social status etc. were felt to be not relevant at the present stage, and therefore not included into the questionnaire. However, the respondent's status as a *library user* (or OPAC user) was ascertained by means of an appropriate question (no. 26). As shown in Figure 4-1, 35% of the respondents were students, and 31% academic teachers and/or researchers. Only 15% of the respondents were librarians, quite contrary to the original

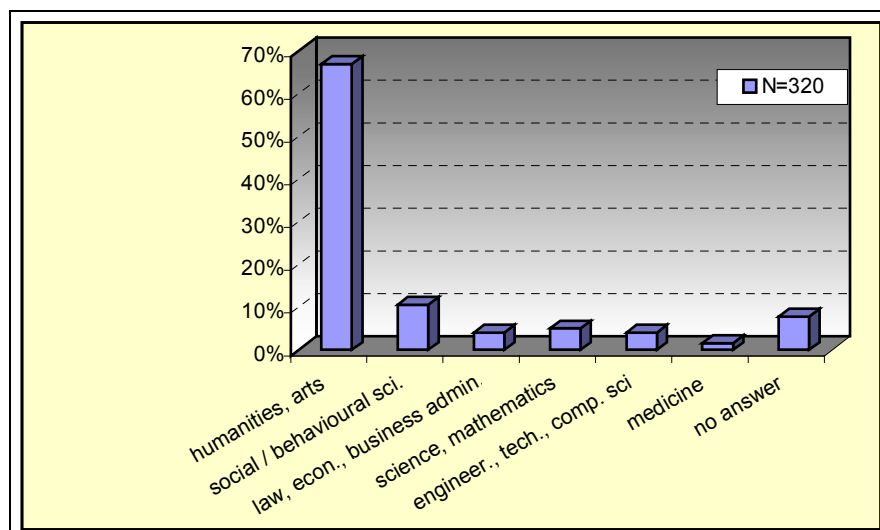
<sup>20</sup> Both ONB and UBW are very large libraries with important historical collections and a huge clientele (the University of Vienna alone has some 80,000 students). At the end of the ranked list we find more special CIPACs such as those of FUB (subjects only), IHS (special library), ZLB (CIPAC mostly used via an in-house network), and WUW (CIPAC and older literature obviously rarely used).

fear that maybe the majority of people to answer the questionnaire might come from this category.



**Fig. 4-1: Library user status**

The overall majority of respondents came from the humanities (Figure 4-2). Although it had been expected that students/scholars from these disciplines would be more interested in CIPACs than others, a proportion as large as two thirds (67%) of all respondents had not been anticipated. The second largest sub-group came from the social and behavioural sciences (11%); all other subject areas were covered by 5% or less, respectively. *This suggests the hypothesis that CIPACs are predominantly used for literature searching in the humanities and have almost no relevance for scientific and technological study and research.*



**Fig. 4-2: Main subject area**

Another factor that was felt to be of interest was *where* the respondents usually performed their searching of OPACs (including CIPACs). Obviously, one of the clear advan-

tages of CIPACS is that they – unlike card catalogues – can be searched without the need of approaching the library in person. The results in Figure 4-3 indicate that in fact the majority of respondents said that they connected to online library catalogues mainly from their homes or offices (54%), whereas not as many searched OPACs primarily on workstations located in the respective libraries.

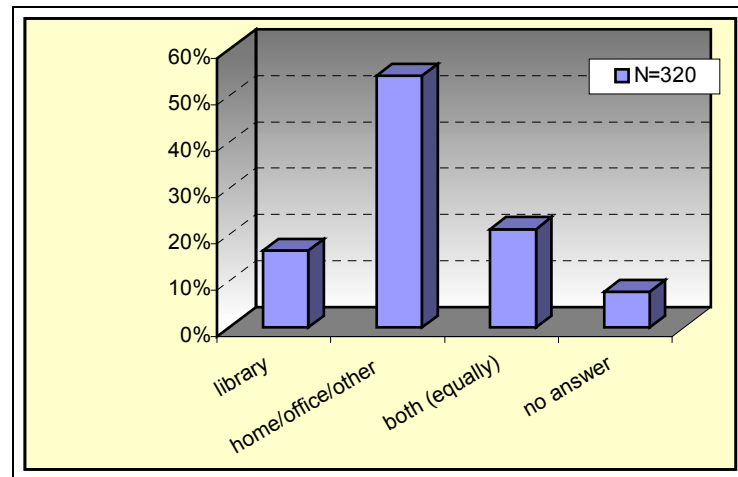


Fig. 4-3: Preferred location for OPAC searching

#### 4.3.2 Total results and standard breaks

In the following sections, the results of the survey will be discussed both for the total sample and also for certain sub-groups of respondents. The percentages for all respondents (or, in the case of several questions, pre-filtered segments of the total sample) will be displayed graphically, with reference to the corresponding tables (C-1 to C-47) in Appendix C7. The results for the sub-groups, or "standard breaks", are also shown in these appended tables and will only be mentioned here when appropriate. Five variables were used as standard breaks:

- **Type of CIPAC:** This was computed according to the library a given respondent was referring to when answering the questionnaire. For this purpose, the libraries (or better, the CIPACS) represented in the survey were categorized into three groups, or "types":
  - Type A (51%): CIPACS based on binary searching (*KatZoom* systems; libraries: IHS, ONB, UBW, WUW);
  - Type B (27%): CIPACS with alphabetical indexes (the Swiss and German *Chopin* CIPACS; libraries: SUB, ZLB, FUB, ULB; plus *DigiKat* at UBH);
  - Type C (22%): CIPACS based on virtual drawers (the Czech CIPACS; libraries: MZK, NKP).

Each respondent was allocated to one of these categories (see Table C-1).

- ***Index of CIPAC expertise:*** This was computed on the basis of question 1 (frequency of CIPAC use) and question 7 (self-rated familiarity with CIPACS). Three categories were formed:
  - High (30%): Respondents who said they had used the respective CIPAC(s) "very frequently" *and* who considered themselves as "rather experienced users" of CIPACS;
  - Low (20%): Respondents who *neither* said that they had used the respective CIPAC(s) "very frequently" *nor* that they considered themselves as "rather experienced users" of CIPACS;
  - Medium (50%): All other respondents.

Each respondent was allocated to one of these categories (see Table C-2).

- ***Main subject area:*** The original categories used in question 26 were aggregated into three groups:
  - Humanities, arts (67%)
  - Social sciences, economics, law (15%)
  - Science and technology, medicine (11%)

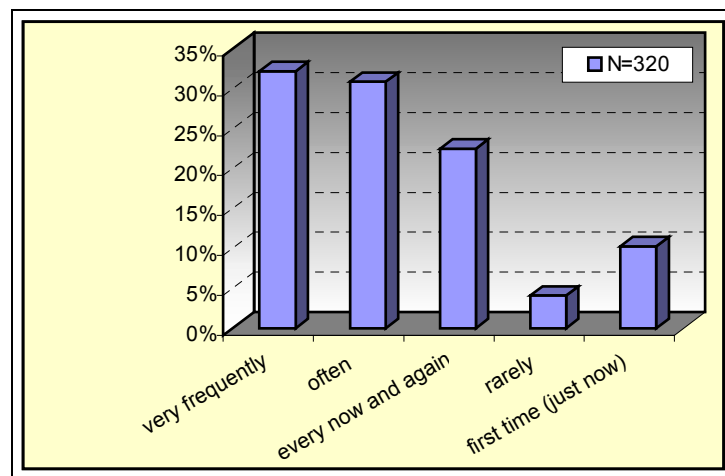
The respondents who did not answer this question (8%) were not included.

- ***Library user status:*** Only three categories (from question 25) were used for this break; the rest (19%) were not included.
  - Student (35%)
  - Academic (31%)
  - Librarian (15%)
- ***OPAC searching location:*** As this break was supposed to contrast users who prefer the library for OPAC searching with those who prefer other locations, only two groups (from question 27) were used; the rest (30%) were not included.
  - Library (17%)
  - Home, office, etc. (54%)

#### 4.3.3 Frequency and purpose of CIPAC use

The intention of the very first question – supposed to apply to every respondent – was to investigate whether the respondents were frequent, infrequent or novice users of the respective CIPACS. The wording of the question ("how often ... in the last semester") was used to refer to a time-span meaningful to most respondents; there was no intention of "measuring" an exact period of time. For the ZLB which is not an academic library this wording was altered to "in the last six months". In the case of libraries offering more

than one CIPAC the question did not relate to a specific CIPAC but to "any of these catalogues".



**Fig. 4-4: Frequency of CIPAC use**

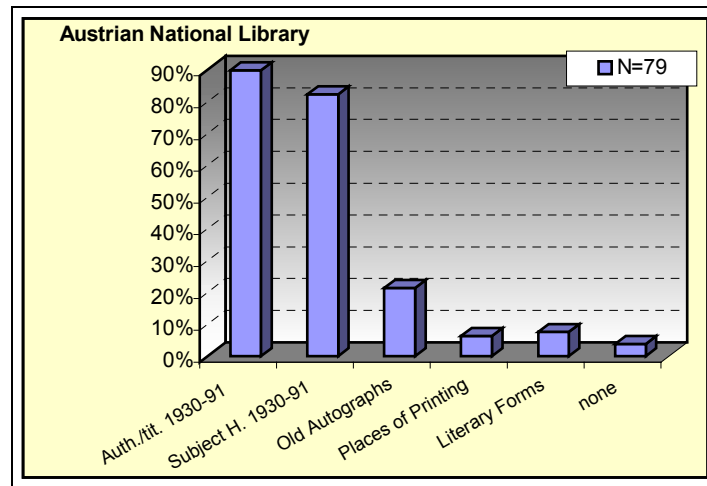
As already mentioned above, Figure 4-4 clearly shows that the majority of respondents were frequent users of the respective CIPACs, describing their behaviour as "very frequently" (32%) or "often" (31%). Only 23% selected "every now and then", and just 4% said that they "rarely" used the CIPACs. The proportion of first-time users ("novices") was only 10%. Although this pattern cannot be generalized to *all* users of CIPACs, the fact that amongst the CIPAC users that answered this questionnaire were so many frequent users suggests the *hypothesis that CIPACs – as a rather special type of OPAC – are used more likely by groups of "regulars" than by occasional users.*

Of the three types differentiated, *type "A" CIPACs* showed a higher frequency of use than the others, probably because of the size and contents of the respective catalogues. Respondents with a background in the *humanities*, and also *academics*, reported – not unexpectedly – a more frequent use of CIPACs than those from other subject areas or library user groups (Table C-3).

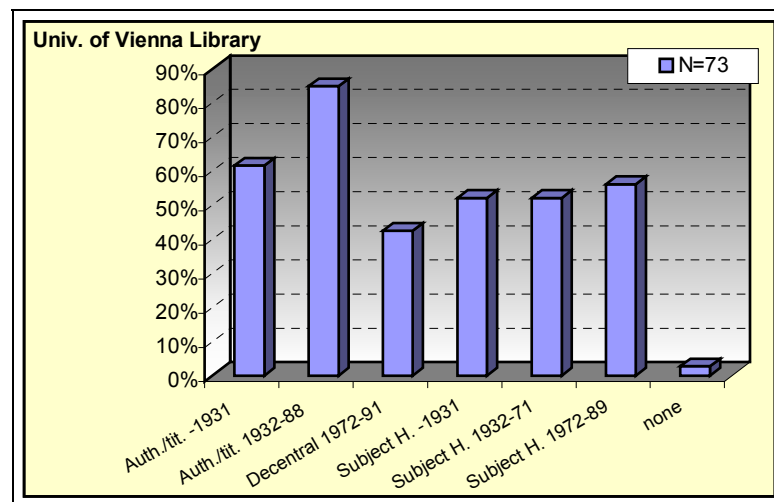
Another question (no. 4) dealt with the perceived importance of the various CIPACs. Although it was asked mainly in order to name the individual catalogues in the questionnaire and to draw the respondents' attention to them, it also produced some interesting findings, especially for the three libraries for which the largest numbers of respondents were obtained (ONB, UBW, NKP).<sup>21</sup> In the case of the ONB, the respondents showed a clear preference for the two "main" CIPACs – the large author and subject catalogues for

<sup>21</sup> It would certainly have been more rewarding to ask this question to representative samples for each participating library.

the 1930–1991 period (Figure 4-5). In the case of the UBW, the preferences are more evenly distributed among the six CIPACs, although the 1932–1988 author catalogue stands out from the others as the most important CIPAC, and the decentral holdings catalogue seems to be the least interesting of the three author/title catalogues offered (Figure 4-6). It should be emphasized that in both libraries the ratings for the subject CIPACs are rather high – a result that had not been foreseen as such and that corresponds with another finding reported below (question no. 2).



**Fig. 4-5: Perceived importance of CIPACs (ONB)**

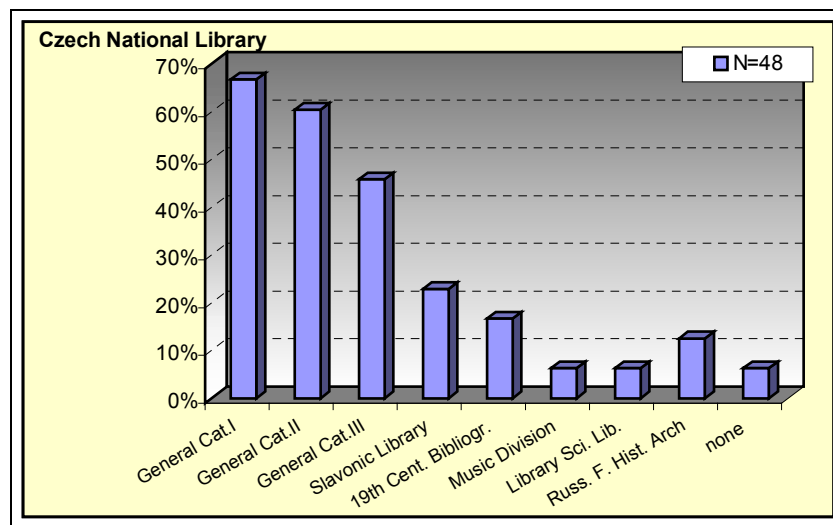


**Fig. 4-6: Perceived importance of CIPACs (UBW)**

For the NKP, Figure 4-7 shows that the three general catalogues are perceived to be much more important than the more specialized CIPACs, with the oldest collection of the library (catalogue I: 1501-1950) topping the range of preferences. Similar results, indicating a greater interest in the general catalogues compared to the specialized ones,

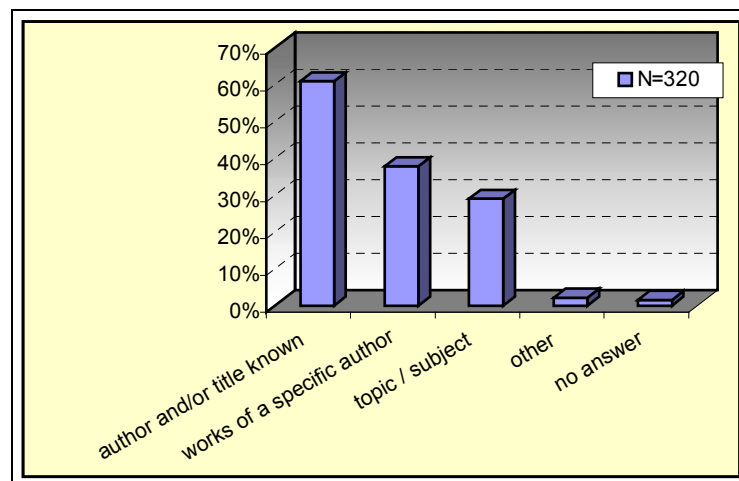


were obtained for the other libraries; however, the respective sub-samples are rather small (Tables C-6 to C-13).



**Fig. 4-7: Perceived importance of CIPACs (NKP)**

The general purpose of CIPAC use was covered by a question (no. 2) that explored the type of the last search performed on a card-image catalogue. Respondents were asked to differentiate between known-item and subject searches, with "works of a specific author" as a third, and "other" as a fourth option. It was possible to check more than only one answer category.



**Fig. 4-8: Type of last CIPAC search**

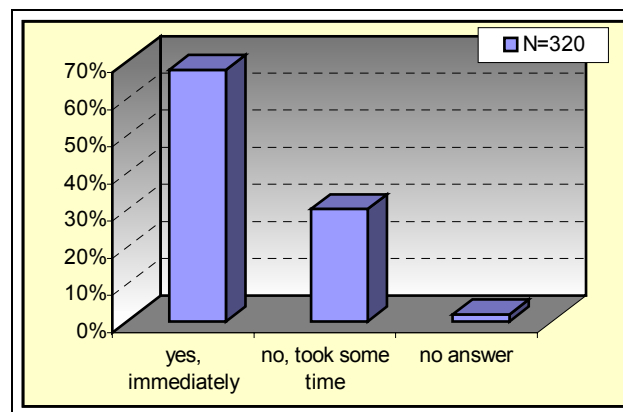
As shown in Figure 4-8, the majority of searches reported were of the kind typically performed on author catalogues (author/title known; works of specific author). This is not surprising, because all but one of the participating libraries offer CIPACs which are author catalogues, whereas the CIPACs of several libraries do not have any features for

subject searching. In view of this, the result must be emphasized that 29% of the respondents said that their last CIPAC search was a search for a subject or a topic. It suggests the *hypothesis that users are interested in CIPACS not only for the (obvious) author/title searching, but also as tools for subject searching*. This aspect will be dealt with further in section 4.3.8 below. For sub-group results, see Table C-4. Questions referring to the frequency of CIPAC use were also asked in connection with

- the awareness of other CIPACS (see 4.3.7)
- the comparison of CIPACS with the original card catalogues (see 4.3.5)
- the comparison of CIPACS with "normal" OPACS (see 4.3.6)

#### 4.3.4 Familiarity with CIPACS, perceived ease of use, users' competence

A number of questions were asked in order to investigate the respondents' levels of familiarity with CIPACS, the problems and difficulties they had perceived and/or experienced, and how they rated the CIPACS with regard to various aspects of browsing and searching.



**Fig. 4-9: Instant familiarity with CIPACS**

One of these questions (no. 5) was asked to find out whether or not the respondents had instantly known how to operate the CIPAC when they used it for the first time. Figure 4-9 shows that the majority said that they "got immediately and intuitively into using it" (68%), whereas only less than a third admitted that "it took me some time to get accustomed to it" (30%).

Respondents referring to "type B CIPACS" showed even a slightly better result than the rest – hinting that at first sight this category of CIPACS may look easier than the others. More noticeable is the different answer pattern of the librarians among the respondents. However, of all standard breaks, the factor correlating most with this variable was the

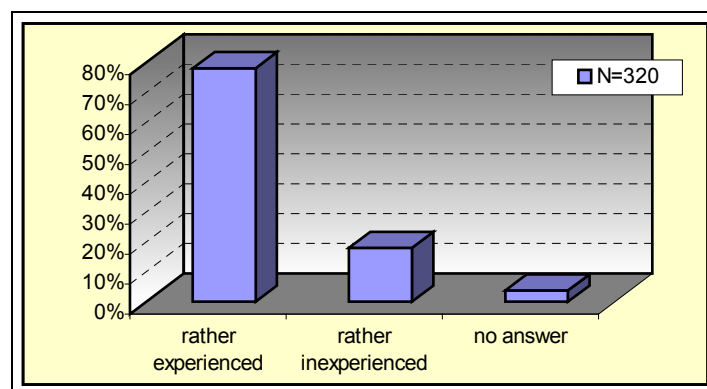
"index of CIPAC expertise" – respondents with a "low" level were much more likely to report initial difficulties (52%) than those with a "high" level (21%). (Table C-14).

The respondents who said they had needed some time to get used to the system were asked to comment on the problems they had; the results of this open-ended question are shown in Table 4-3. The answers seem to indicate that the main difficulty for the users was the CIPAC interface as such – they felt uncertain how to navigate, or thought it was too cumbersome in one way or the other. All other aspects mentioned (e.g. bad legibility of the images, problems with the catalogue such as filing rules or subject headings) were obviously less important.

	Frequency	Percent
Navigation was unclear / difficult to understand	29	30%
Navigation arduous, inconvenient, time-consuming	20	21%
Interface confusing, lack of overview & orientation	9	9%
Legibility of images, badly scanned cards	5	5%
Filing sequence, subject headings, split catalogues	11	11%
Not enough help / personal help needed	13	13%
Book ordering functionality	7	7%
Computer handling (buttons, icons, clicking, hardware)	13	13%
System too slow	7	7%
Other	1	1%
no answer	18	19%
Total (respondents who needed some time to get accustomed to operating the CIPAC)	97	100%

**Table 4-3: Problems when using CIPACs for the first time**

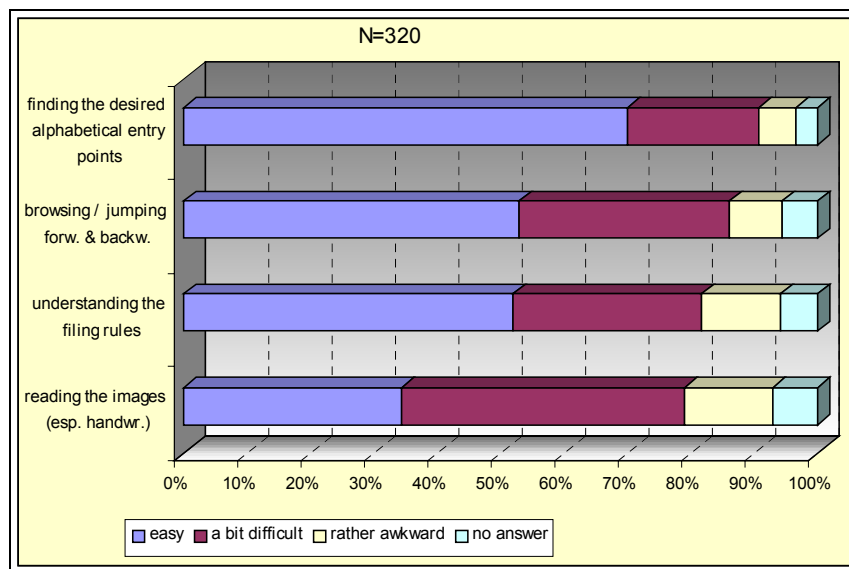
Another question (no. 7) – it was also used for the "index of CIPAC expertise" – invited the respondents to rate themselves as "rather experienced" or "rather inexperienced" users of CIPACs. In view of the fact that the sample consisted of many frequent users who also often said that they had not had initial difficulties, it is not surprising that a high percentage (78%) rated themselves as "experienced" (Figure 4-10).



**Fig. 4-10: Self-rated familiarity with CIPACs**

The tendency of seeing oneself as an experienced user was particularly strong among respondents from the humanities (86%), a finding that fits into the picture of CIPACS as instruments predominantly used in that subject area. Of all sub-groups, the respondents talking about "type C" CIPACS were the ones with the smallest percentage of experienced users (59%; Table C-19).

In addition, there were three other questions relating to aspects connected with familiarity, ease and convenience of use, successful searching etc. One of them (no. 6) explicitly mentioned "convenience and ease of use"; the respondents were asked to rate four aspects of the CIPAC used most recently as "easy", "a bit difficult", or "rather awkward" (Figure 4-11).

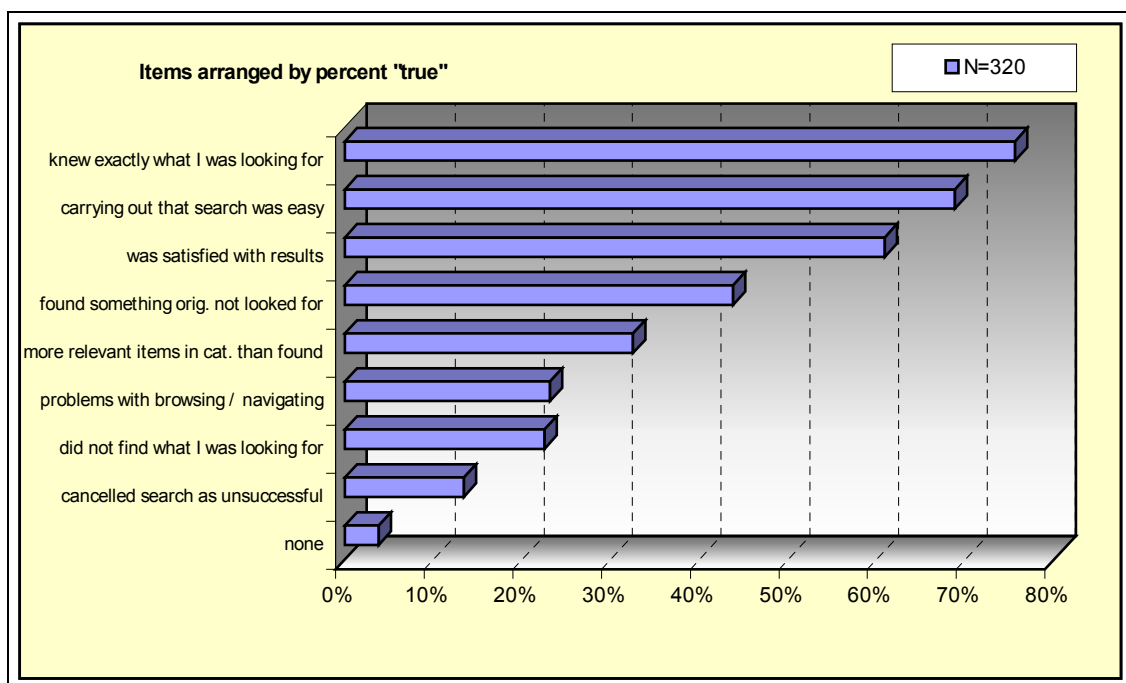


**Fig. 4-11: Convenience and ease of use of the CIPAC most recently used**

The great majority of respondents (70%) considered it relatively easy to *locate the right alphabetical entry points* – a finding which may look surprising at first sight but obviously reflects the overall structure of the sample (rather frequent/experienced users); the data also show a positive correlation with "CIPAC expertise". Only "type C" users tended not to follow this pattern as they chose "a bit difficult" much more often (39%) than the users of other CIPACS (15–16%; Table C-13). The second navigational aspect – *browsing / jumping forward and backward* – was also seen as rather easy albeit by a smaller majority (53%). It is most interesting that the answer pattern differs in accordance with the three CIPAC types: While "type B" CIPACS received the best rating (68% "easy", 24% "difficult", 5% "awkward"), "type A" CIPACS were more often seen as not so easy to navigate (50% – 35% – 12%; Table C-16). The third item – *understanding the filing rules (alphabetical order of cards)* – was rated in a similar way to the second. Here, "type C" CIPACS were rated better than the others (only 7% "akward", compared

to 17% in the case of "type A"), which might be indicating that the filing rules were maybe less complicated in Czech card catalogues than in their German counterparts which often used the PI (Table C-17). Somewhat surprisingly, the last item – *reading the images of the cards (esp. when handwritten)* – was given the least favourable rating of the four. This was particularly true in the case of "type A" CIPACS, where 21% of the users chose the "awkward" category (compared to only 4–5% of the other two groups), a result that obviously reflects the criticism of the UBW's pre-1932 CIPAC (Table C-18), which was also uttered by a number of respondents elsewhere in the questionnaire (various open-ended questions).

In connexion with the type of their last CIPAC search (known-item v. subject, see above) the respondents were also asked to describe that last search by eight statements – both positive and negative ones – that could be rated each as "true" or "not true" (question no. 3). Figure 4-12 shows the proportions of the "true" categories.



**Fig. 4-12: Characteristics of last CIPAC search**

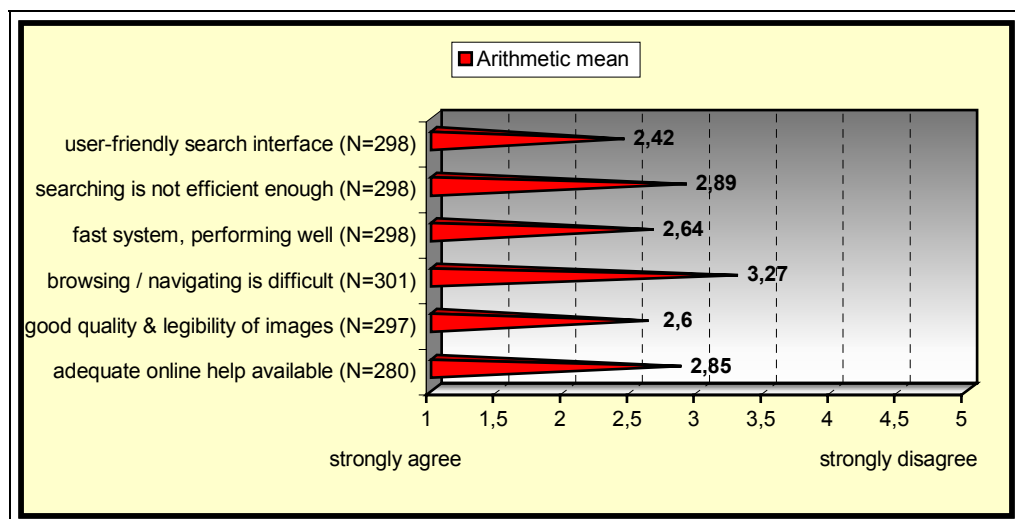
At first sight, the overall picture resulting from this question is again a rather favourable one. A large majority (69%) of the respondents said that carrying out that search was easy – only 23% admitted that they had some problems with browsing or navigating – and that they were pleased with the results (61%). To a great extent (44%), they even found items originally not looked for (as one would expect when browsing card catalogues). However, 23% did *not* find what they were looking for. Even if this includes the cases when the information looked for was not in the respective catalogue, the fact

that 13% said that they had broken up their search as unsuccessful does indicate the existence of a certain failure rate. This suspicion is supported further by another result – the relatively large proportion (33%) who thought that the CIPACS probably contained more relevant items than they managed to retrieve. *Maybe searching of the CIPACS was not that easy altogether!*

The analysis of the standard breaks reveals three interesting results (Table C-5):

- The level of CIPAC expertise correlated (not unexpectedly) with most statements.
- The CIPACS of "type B" received (again) the relatively best rating. In comparison with the other two types, "type B" respondents said much more likely that they were easy to use (84% v. 69% [A] and 50% [C]), and less frequently that they had problems with browsing/navigating (14% v. 26–27%) or thought that there was more in the catalogue than they had managed to find (21% v. 37%).
- Compared to academics and librarians, *students had remarkably more problems* with searching CIPACS, as all results for this sub-group are either above average (negative items) or below average (positive items).

The third question (no. 8) to explore convenience and ease of use of CIPACS presented six statements (positive and negative ones); the respondents were asked to express the extent to which they agreed or disagreed with each item. There was a five-point answer scale that went from "strongly agree" to "strongly disagree", with "neutral" as the mid-point. During data analysis, weights from 1 to 5 were assigned to these categories in order to compute for each statement the arithmetic mean and the standard deviation.<sup>22</sup>



**Fig. 4-13: Characteristics of "this library's" CIPAC(s)**

<sup>22</sup> This computation was made on the basis of the number of respondents who actually rated the respective item (hence the differing Ns per item).

As shown in Figure 4-13, the resulting overall picture is less favourable than in the case of the previous question. Although the respondents did not agree with the two negative statements ("browsing/navigating is difficult", "searching is not as efficient as it should be") they did not really reject them either. Furthermore, none of the positive statements was really accepted; the relatively best rating was given to "the search interface is user-friendly", the worst to "there is adequate online help available". As the table in the appendix (C-20) indicates, there was generally a certain degree of disagreement between the respondents; this variation is also expressed by standard deviation values between 1.1 and 1.25 (except .9 for the last item for which the majority chose the neutral category, i.e. "don't know").

The sub-group results (Table C-20) reveal that the "type B" CIPACS were again rated more favourably than the others (except for online help). This finding and the previously reported results suggest the *hypothesis that CIPACS that offer alphabetical indexes as entry points are seen as more user-friendly and convenient than the others, and are therefore accepted better by the users*. Besides, there is again a covariation of the ratings with the level of CIPAC expertise, and also a tendency that users from the humanities gave a slightly more positive rating. Finally, the results for the student sub-group are again less positive (or more negative) than those for the academics and librarians, which – together with the above-mentioned findings suggests the *hypothesis that students are more likely (than other users groups) to experience CIPACS as not so easy to use and/or efficient to search*.

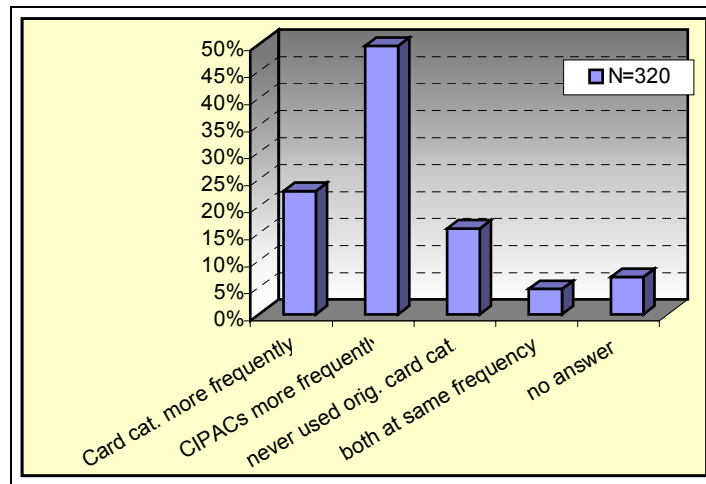
#### 4.3.5 CIPACS versus original card catalogues

Two questions dealt with CIPACS as compared to their predecessors, the original card catalogues. First, the respondents were asked which of the two they used more frequently (question no. 9; Figure 4-14).

The great majority of the respondents (50%) said that they used the present-day CIPACS more often than the former card catalogues, whereas only in 23% of the cases the opposite was reported. Whilst 5% claimed that they used both catalogue types at about the same frequency,<sup>23</sup> 16% had never used the card catalogue(s) on which the CIPAC(s) they were referring to was/were based.

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<sup>23</sup> This answer category was not in the questionnaire; respondents who (by their comments) claimed that they used both at the same frequency were then assigned this category. It is likely that the percentage would have been higher if the category were actually presented in the questionnaire.



**Fig. 4-14: Use of former card catalogues, compared with CIPACS**

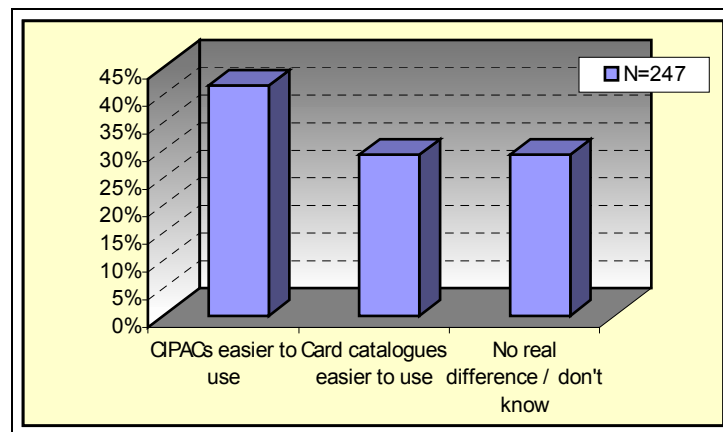
As the main reason for using CIPACS more often, their *easy and universal availability through the world-wide-web* was the reason most frequently given in the comments to this question (Table C-22). The possibility of accessing CIPACS independent of place was more often mentioned than other web-related aspects (access via the WWW is more convenient, can be done independent of time, is time-saving). Not as many respondents said that they used CIPACS more often because they were faster or easier to search than card catalogues. Interesting enough, both the speed of browsing and the ease of navigation were rather used by the other category of respondents to explain why they had formerly searched card catalogues more frequently (Table C-23). Another criterion mentioned several times was that card catalogues supposedly offered a better overview of the cards. As the main reasons for not having used the card catalogue(s) at all, residence in a different place (one had never been at the library's site) and age (one was not a student at that time) were nominated, whereas only in a few cases the searching of card catalogues was described as too arduous or cumbersome (Table C-24). Thus, it can be hypothesized that *primarily the simple fact that CIPACS are available over the web – and not their other possible benefits – has led to a better utilization of these resources* compared to the time when they were only available in one place and in paper format.

Respondents scoring high on the "index of CIPAC expertise" were much more likely to use CIPACS more frequently (65%) than those scoring low (22%), and, consequently, less likely to have used card catalogues more often (16% v. 28%). It is also interesting to note that among the respondents with a low score on this index, there was a much higher proportion who had never used the card catalogues. Another noticeable subgroup result is that among the respondents assigned to "type C" CIPACS the percentage having used the former card catalogues more often was much higher (36%) compared



with the two other sub-groups (18–21%); however, this is probably a country-specific rather than a CIPAC-specific result. Finally, the result that home/office-based OPAC users said more often than library-based users that they searched CIPACS more frequently (56% v. 38%) matches the above-mentioned statement concerning the availability of CIPACS over the web (Table C-21).

The other question (no. 10) once again touched on the ease of use aspect, as the respondents<sup>24</sup> were asked whether they thought that CIPACS or the former card catalogues were easier to use.



**Fig. 4-15: Perceived ease of catalogue use**

As shown in Figure 4-15, 42% voted for CIPACS, but a strikingly large minority (29%) thought that card catalogues were easier to use. Also, a large proportion were undecided or said that there was no difference (29%), so that in total *the majority of respondents did not feel that CIPACS were easier to use*. Even amongst those who scored high on the "index of CIPAC expertise" the overall vote was not in favour of the CIPACS. However, CIPACS were rated slightly more positive by home/office OPAC users as well as by students. Another interesting sub-group result is that only 37% of "type A" CIPAC users thought that the electronic catalogues were easier to use, compared to 46–47% of the "type B" and "type C" users (Table C-25).

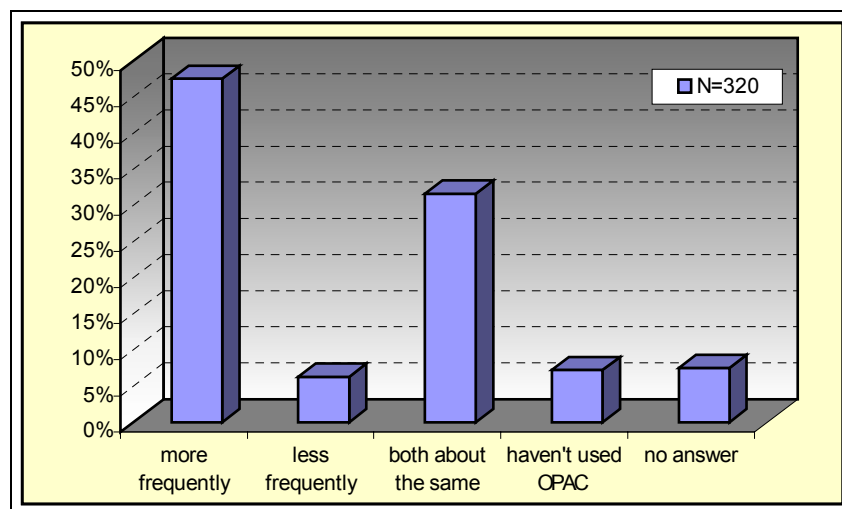
The respondents were also asked to give the reasons for their judgements (Tables C-26, C-27). Of the reasons in favour of CIPACS, the various advantages of access via WWW (not really contributing to the ease of use in comparison with card catalogues) and ergonomical aspects (e.g. no need to move around between catalogue cabinets or to wait for drawers used by other people) were the most frequently mentioned ones. Other aspects (CIPACS make it possible to print out individual cards or to place orders online) were

<sup>24</sup> Only those who had not claimed they had never used card catalogues (previous question).

also addressed, but not as often. Those respondents who believed that card catalogues are easier to use mentioned mainly the speed, the ease and the flexibility of browsing/navigating the cards as the primary issues. This finding again indicates that – at least to a certain proportion of CIPAC users (including experienced ones) – the electronic versions do not appear to be great improvements, as to them they appear not as fast, as comfortable and as easy to use as their predecessors.

#### 4.3.6 CIPACS versus "normal" online catalogues

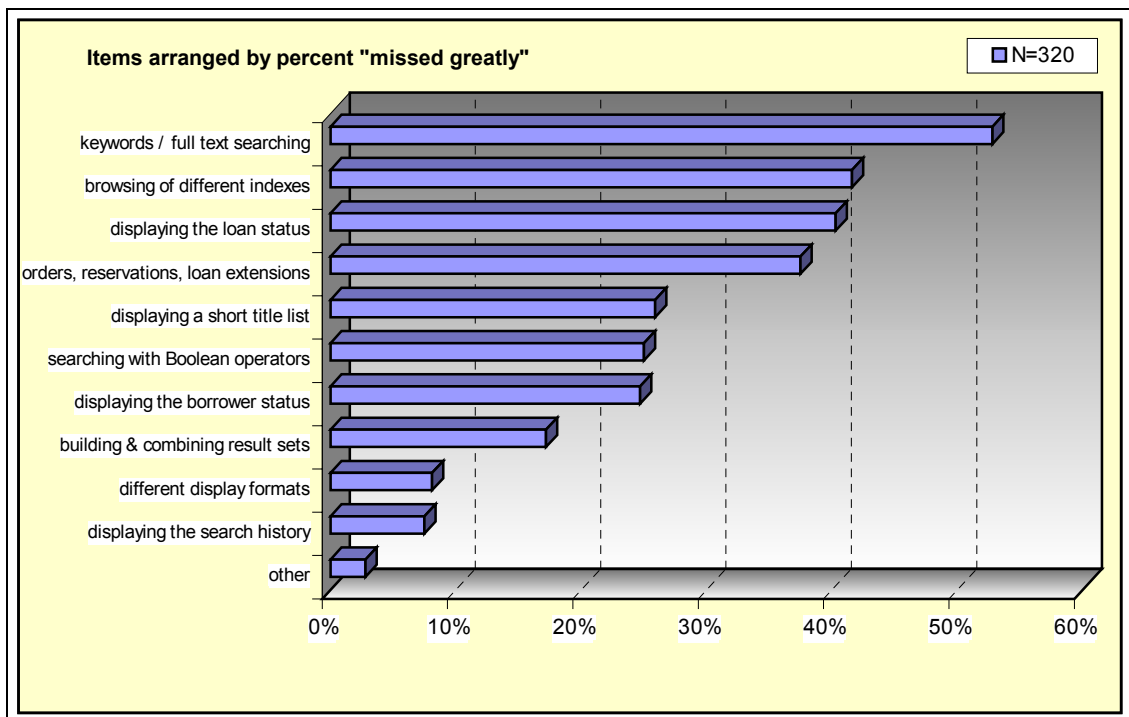
In order to compare CIPACS with "normal" online public access catalogues, two questions were asked. The intention of the first (no. 11) was to find out whether the respondents were using the CIPACS more or less frequently than their libraries' OPACs. Again, the expression "last semester" was used as the period of reference for the respondents' frequency judgements.



**Fig. 4-16: Use of normal OPAC(s), compared with CIPAC(s)**

As shown in Figure 4-16, almost half the sample (48%) reported that they had used the "normal" OPACs more frequently than the CIPACS, and only a small minority of 6% said that the opposite was true. Even if the respondents who had not used the "normal" OPACs at all (7%) were added to the second category, it would still remain a distinct minority. However, the existence of a relatively large fourth group (32%) claiming they used both types of catalogues at about the same frequency shows that the overall picture is not that homogeneous. Nevertheless, it can be assumed that – even among users of CIPACS (i.e. the present sample) – *the card-image catalogues are generally not used as frequently as the "normal" OPACs offered by the respective libraries.*

Amongst the sub-groups analysed, the users of "type B" CIPACS were far above average (74%) to vote for "normal" OPACs. Although this looks as if this particular type of CIPACS would cause a lower frequency of use it seems more likely that other variables (circumstantial factors such as range of materials in the CIPACS, kind of library or university/study programme) contributed to this result. Other sub-groups that used the "normal" OPACs noticeably more often than the others are respondents with a background in the social sciences, economics or law (68%), librarians (61%) and people who preferred the library as the location for searching online catalogues (60%). Also, the respondents rating "medium" on the "index of CIPAC expertise" seem to fall into this category (57%), whereas those with a "high" score seem more likely to use the CIPACS more often than on average. Interesting enough, the respondents with a "low" score on that index are the sub-group with the highest percentage (16%) of those who did not use the "normal" OPACs at all (Table C-28).



**Fig. 4-17: OPAC features missed "greatly" when using CIPACS**

The second question (no. 12) listed ten options and features usually available on "normal" online catalogues<sup>25</sup> and asked the respondents to indicate for each item if they missed it "greatly", "a bit" or "not at all" when using their library's card-image catalogue(s). It is quite obvious that CIPACS cannot be expected to offer all these features – in that case they would be full OPACs – but it was felt that this kind of question would help to reveal the main deficiencies of CIPACS as experienced by their users, and at the same

<sup>25</sup> plus an open-ended "other" category as an eleventh item.

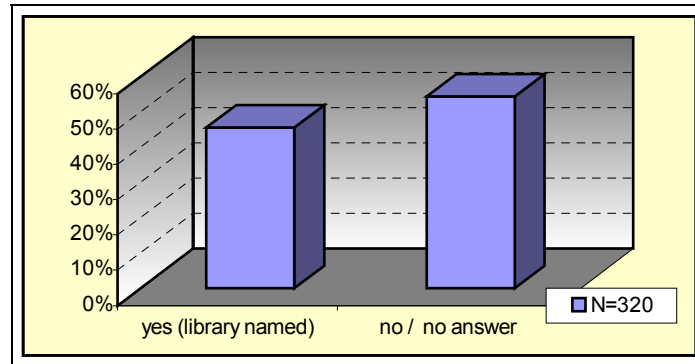
time help to understand which features of "normal" OPACs are appreciated most. Figure 4-17 shows the results for the "missed greatly" category only. It is clearly visible that the OPAC feature which was given the highest priority is "searching of keywords / searching of full texts of the catalogue record" (53%). This leads directly to the *assumption that CIPACs that do offer this option – BerninaSpider systems (Zurich, Luzerne), HeBIS-Retro (Frankfurt), etc. – will be accepted better by their respective user communities than the (majority of) CIPACs which were created without optical character recognition* of the texts on the original catalogue cards. This is supported further by the finding that users of "type A" CIPACs (i.e. those with the most limited search options) rated this feature more frequently as "greatly missing" (60%) than the users of "type B" and "type C" CIPACs (51% and 39%). Also, those with a "high" score on the "index of CIPAC expertise" nominated this feature far above average (65%). Students (62%) and respondents with a humanities background (60%) are other sub-groups showing percentages above average (Table C-29).

The second item in order of rank (42%) is also a retrieval-related one – "browsing of different indexes (authors, titles, subjects etc.)" – and also concerned with an option that most CIPACs do not offer. The indexes of every <sup>th</sup> author or subject heading that are typical features of "type B" CIPACs are seemingly not regarded as a replacement for "real" index browsing because 46% of the respective sub-group said they would miss this feature "greatly"! Also, students (52%) and librarians (51%) voted for this item above average. However, unlike in the case of the first item here the level of CIPAC expertise seems not to play any role.

The two features following closely behind in the ranked list are "displaying the loan status (availability) of the books" (40%) and "making orders (from stacks), reservations, loan extensions" (38%). Both are not related to retrieval but to circulation – a finding that points to the importance of this aspect of online catalogues and supports the *assumption that CIPACs with some sort of interface to circulation will gain better acceptance than CIPACs without such features*. Subsequently, on places five to seven we find "displaying a list of short titles" (26%), "using Boolean operators (AND, OR, NOT) for searching" (25%) and "displaying the borrower status (e.g. books overdue, fees)" (25%). Of the remaining features, only "building and combining sets of search results" (17%) is of some importance for CIPAC users, whereas their interest in "choosing from several different display formats" (8%), "displaying the search history" (8%) and "other" options (3%) seems to be rather low.

### 4.3.7 Awareness of other CIPACS

After having dealt with "normal" OPACs, the respondents were made to think of other CIPACS they might be familiar with. First, they were asked if they knew of any card-image catalogues that other libraries offer over the web (question 13). The results of this question are shown in Figure 4-18.<sup>26</sup>



**Fig. 4-18: Awareness of other CIPACS**

Almost half the respondents (46%) claimed they knew of some other CIPAC(s), whereas 54% said they had no such knowledge. The sub-group results in Table C-30 reveal that the awareness of other CIPACS does not only correlate with the "index of CIPAC expertise" ("high": 59%; "low": 31%) but also with the user status (academics: 59%) and the subject background (humanities: 52%). In contrast, the co-variation with "type of CIPAC" is certainly an artefact.<sup>27</sup>

The respondents who said they knew of one or several other CIPAC(s) were also asked to specify the respective libraries or institutions; their answers were coded as "correct", "wrong" or "unclear".<sup>28</sup> As shown in Table 4-4 the vast majority of the respondents (81%) were able to name at least one correct institution; only 19% failed to do so. However, most respondents knew of only one relevant institution. The number of wrongly named or unclear libraries or institutions was relatively small. This result indicates that there is a certain level of awareness of other CIPACS, even if it cannot be assumed to be very high or sophisticated.

<sup>26</sup> Because in the case of this question "don't know" has the same meaning as "no", those respondents who did not answer were also counted as "no".

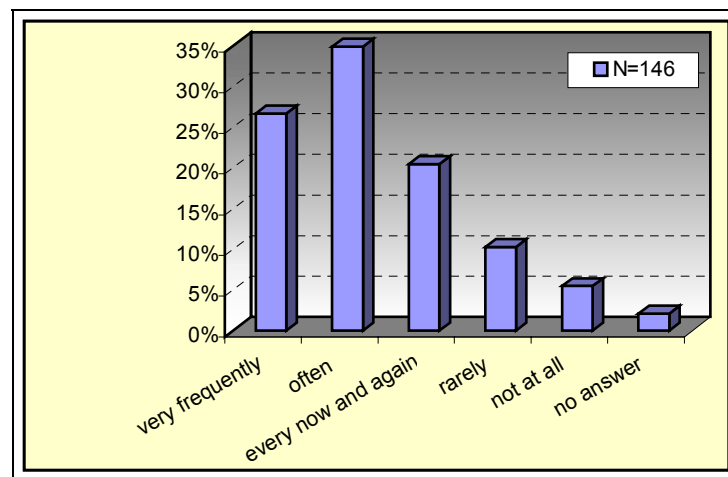
<sup>27</sup> The respondents of the "type A" group (57%) were more likely to answer "yes", but not because of the CIPAC type but as a result of the existence of CIPACS at two major research libraries in the same city (Vienna) that happen to be of the same software type.

<sup>28</sup> The computation of frequencies for the individual institutions named by the respondents would only have made sense in the context of a representative and quantifiable study.

		Frequency	Percent
No. of correctly named libraries / institutions	one	97	66%
	two	17	12%
	three	5	3%
	none	27	19%
No. of wrongly named libraries / institutions	one	11	8%
	two	9	6%
	none	126	86%
No. unclear	one	9	6%
	more	5	3%
	none	132	90%
Total (respondents who said they knew of other CIPACs)		146	100%

**Table 4-4: Other CIPACs specified by the respondents**

Those respondents who said they knew of other CIPACs (N=146) were subsequently asked how often they had used card-image catalogues of other libraries in the last semester (question 14). As shown in Figure 4-19, over 60 percent said they used such CIPACs at least frequently (26% "very frequently" and 35% "often") and another 21% "every now and again", whereas only relatively small proportions of the respondents used them rarely (10%) or not at all (6%). This seems to indicate that *if CIPAC users know of other online catalogues of this kind, they are likely to use them quite frequently as well.*

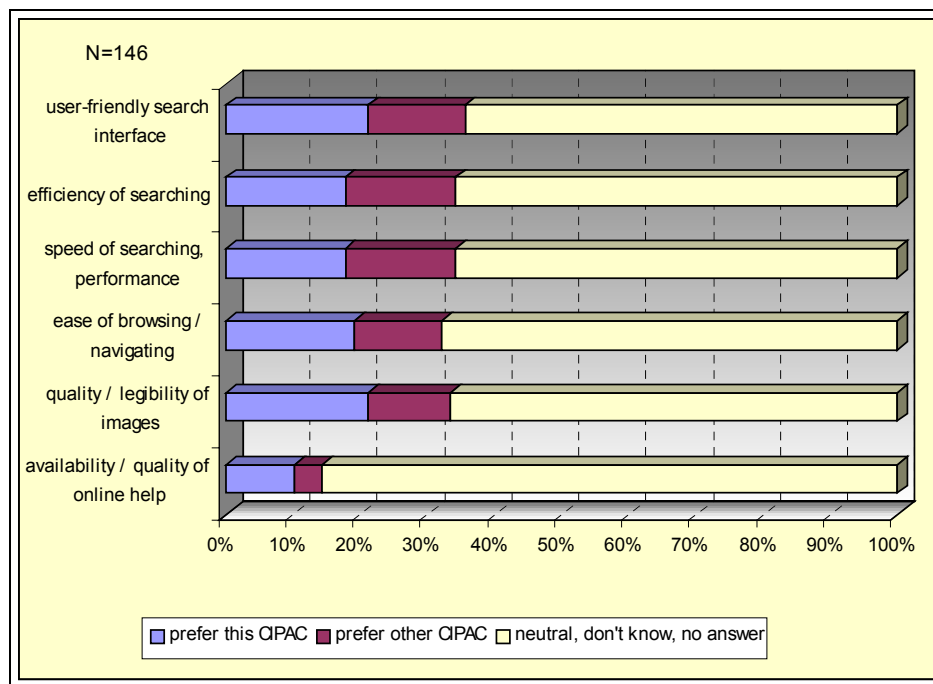


**Fig. 4-19: Frequency of use of other CIPACs**

The sub-group results show that there is not only considerable co-variation of this pattern with the "index of CIPAC expertise", but also with "type of CIPAC", as respondents of the "type A" group reported again – see section 4.3.3 – a higher frequency of use (70% "very frequently" or "often"), especially when compared to the "type B" group (38%). Another sub-group with an above-average value are academic teachers/re-

searchers (75%), whereas it seems that librarians who are aware of other CIPACs are not as likely to make practical use of their knowledge (Table C-31).

The following question (no. 15) asked the respondents who had said they were aware of other CIPACs to decide whether they preferred "their" CIPAC or other CIPACs with regard to six aspects. However, the overall picture in Figure 4-20 suggests that this question was beyond many respondents' level of awareness because the majority answered by choosing "neutral / don't know" or did not answer at all.

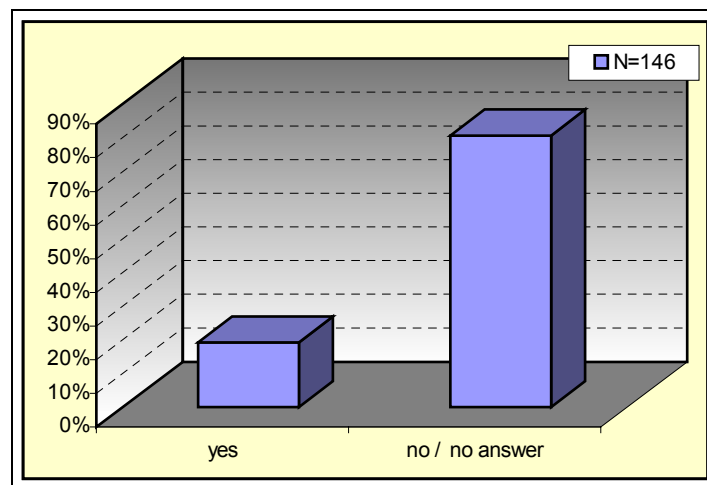


**Fig. 4-20: Comparing "this library's" CIPAC with other CIPACs**

Generally speaking, the distribution of the judgements seems to indicate that the CIPAC users who did actually vote were not too happy with "their" CIPACs, as they often said they preferred another library's CIPAC. This is particularly true for the two aspects, "efficiency of searching / quality of results", and "speed of searching / system performance" (both 18% v. 16%). Although the sub-group results must be interpreted with caution (because of the reduced sample size, N=146) there is one consistent result to be mentioned: In the case of all six items "type B" CIPACs received noticeably better ratings than "type A" and "type C" CIPACs (Table C-32ab).

Finally, these CIPAC users were asked if they knew of any features (e.g. for searching, navigating, displaying) of other card-image catalogues that "their" CIPACs do not offer (question 16). The results show again the limits of the respondents' awareness, as only 19% answered "yes" (Figure 4-21; Table C-33). The features actually mentioned in this

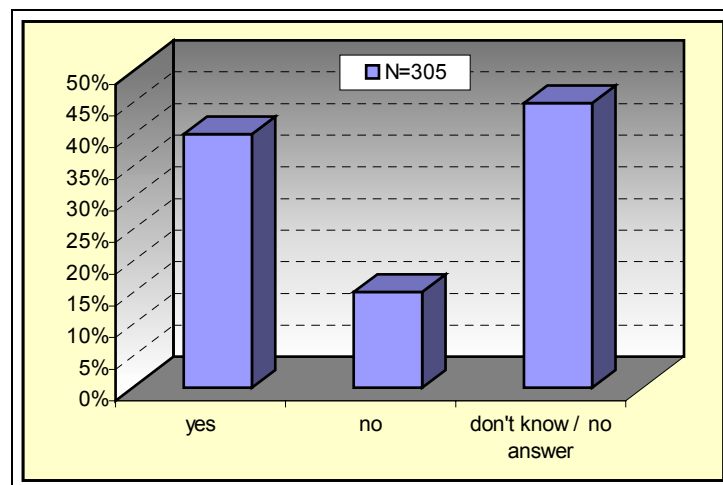
context included options for online book ordering (10), for searching or browsing (other data fields, indexes, keyword searching) (10), and navigational aspects (7).



**Fig. 4-21: Awareness of additional features of other CIPACs**

#### 4.3.8 CIPACs and subject searching

In order to draw the respondents' attention to subject searching they were first asked whether "their" library's CIPAC(s) offers any options that support searching for topics rather than authors or titles (question 17).<sup>29</sup>



**Fig. 4-22: Awareness of features for subject searching**

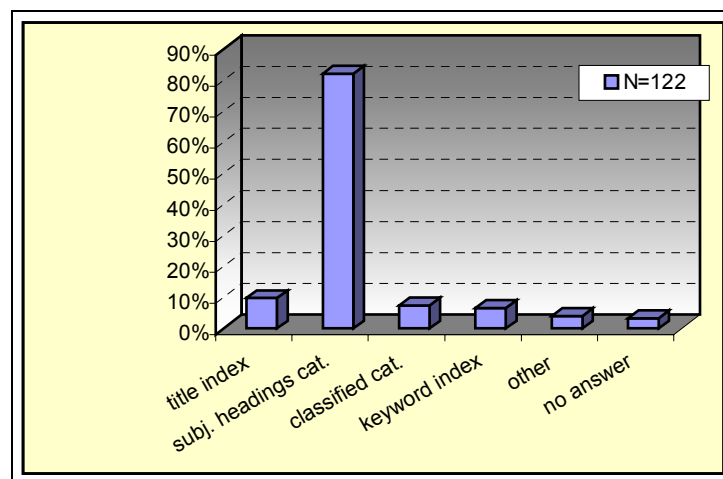
Figure 4-22 shows that 40% of the respondents answered "yes", 15% "no", and 45% said they did not know – a somewhat ambiguous result as it cannot be validated easily.

<sup>29</sup> As the only CIPAC offered by FUB is a subject headings catalogue, this question and the following one were not included in the questionnaire for that library's users.



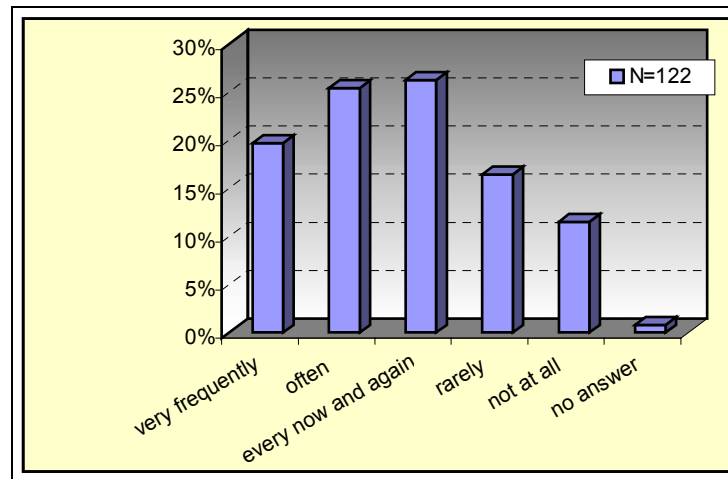
For example, 10% of the "type C" users claimed that their CIPACS had such options (which is not correct), and only 55% of the "type A" users answered "yes" (Table C-34), although the CIPACS of ONB, UBW and WUW include subject catalogues (which was mentioned explicitly at the beginning of the respective questionnaires). The result, therefore, seems to indicate that *many CIPAC users are not really aware of the search options that their catalogues actually offer.*

By means of the same question those who answered "yes" (N=122) were asked to name the features for subject searching available on their CIPACS. The results in Figure 4-23 show that most respondents chose "a subject headings catalogue" (82%, in many cases correct), whereas the other options – mostly not being features of the CIPACS under discussion – were nominated only by small proportions of the respondents. The sub-group results show a great amount of variation – e.g. 97% of the "type A" group mentioned the subject headings catalogue (correct!) – , but most of these data are based on rather small numbers of respondents (Table C-35).



**Fig. 4-23: Perceived features for subject searching**

The same pre-filtered group of respondents (N=122) was subsequently asked about the frequency of their subject searches on CIPACS, again with "the last semester" as the period of reference (question 18). As shown in Figure 4-24, almost half of the respondents said that they had undertaken frequent subject searches (20% "very frequently, 25% "often"). Another 26% searched occasionally for topics, whereas only a minority reported rare or no subject searches at all. This seems to indicate that *if CIPAC users are aware of options for subject searching they are rather inclined to make frequent use of such features.* The sub-group results, although based again on only small numbers of respondents, suggest that a high level of CIPAC expertise increases the likelihood of conducting subject searches (36% "very frequently; see Table C-36).



**Fig. 4-24: Frequency of use of features for subject searching**

The respondents<sup>30</sup> were also asked to comment on positive and/or negative experiences with subject searching on CIPACS (question 19). However, from this open-ended question (which also covered various catalogues) no detailed discussion could be expected. Therefore, a high percentage of non-response was no surprise: 77% mentioned no positive and 60% no negative experiences (Tables C-37, C-38). The following tables (Table 4-5, Table 4-6) give an overview of the positive and negative aspects mentioned by the respondents. Obviously, a number of aspects not primarily relevant for subject searching were also mentioned in this context. However, there is at least some indication for a lack of orientation when searching for subjects on CIPACS – not enough information about the system of subject headings, uncertainty about the degree of recall when conducting a subject search, doubts about the quality of the subject headings. A further investigation of this issue would certainly require personal qualitative interviews with selected users of specific CIPAC systems.

	Frequency	Percent
fast, efficient, straightforward	11	8%
unexpected hits (serendipity)	9	7%
general advantages of CIPACS	6	4%
various advant. of universal access via www	5	4%
other	3	2%
no answer	105	77%
Total	137	100%

**Table 4-5: Positive experiences with subject searching**

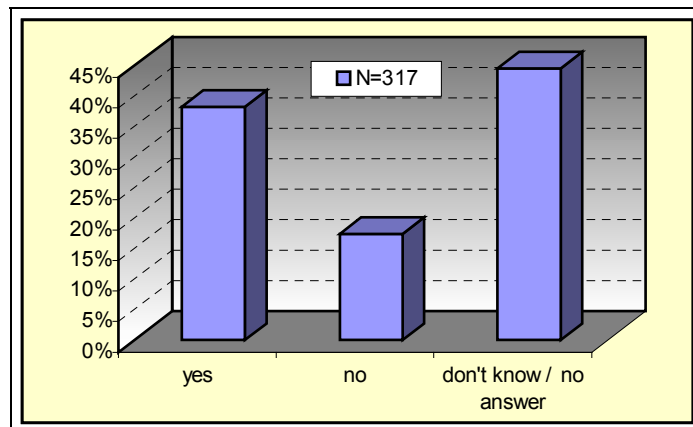
<sup>30</sup> The same pre-filtered group as before, plus the respondents from FUB (N=137).

	Frequency	Percent
inadequate subject headings	8	6%
lack of orientation (subj. headings, recall)	10	7%
cards / call nos. illegible, half-empty cards	14	10%
arduous, time-consuming navigation	21	15%
only limited search options	5	4%
incomplete coverage of catalogue	2	2%
system too slow	5	4%
other	5	4%
no answer	82	60%
Total	137	100%

**Table 4-6: Negative experiences with subject searching**

#### 4.3.9 CIPACS and circulation/loan

Some of the CIPACS covered by the user survey offer an option for online book ordering, e.g. a form where users can enter the call number, their user ID and other data, whereas other CIPACS do not have any such features implemented. Therefore, a detailed discussion of these functionalities would require a CIPAC-specific study, so that in the context of the present survey which covered eleven card-image catalogues only a few general aspects could be touched. First, the respondents<sup>31</sup> were asked if "their" CIPAC had any sort of interface to the respective library's circulation or loan system (question 20); the results are shown in Figure 4-25.



**Fig. 4-25: Awareness of interface to circulation/loan system**

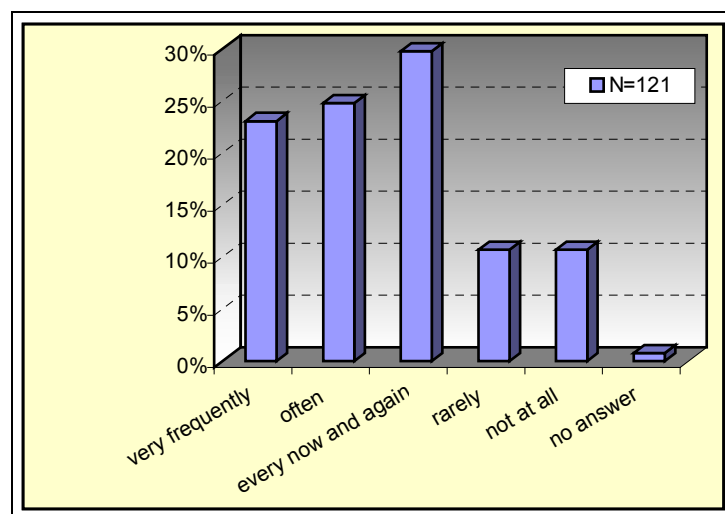
38% of the respondents answered "yes" and 17% "no", but a large proportion (45%) said they did not know or gave no answer at all. It is not possible to validate the correctness of the yes/no-answers, but this doesn't really matter. The fact that counts is that *a large proportion of CIPAC users are seemingly not aware whether their system*

<sup>31</sup> All respondents except those from ZLB where no circulation system was operated (N=317).

*offers any such features or not.* The degree of awareness varies noticeably with the level of CIPAC expertise ("high": 27% "don't know", "low": 78%) and with the CIPAC type, as users of "type B" CIPACs seem to be more knowledgeable than users of "type C" CIPACs (35% "don't know" v. 66%; see Table C-39).

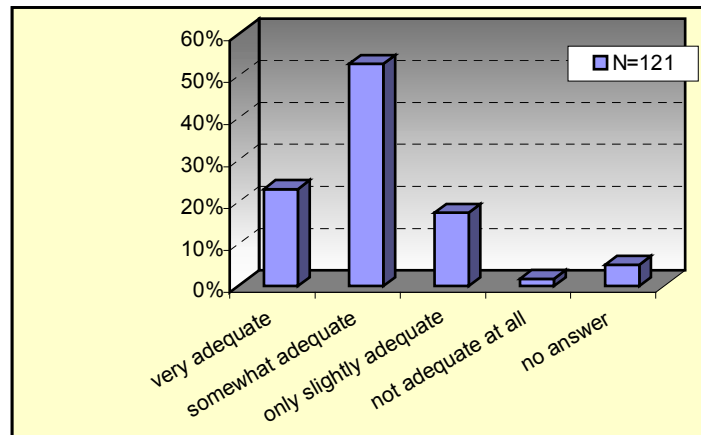
The respondents who answered "yes" (N=121) were also asked to name the kind of interface their CIPAC would offer. The vast majority (71%) selected "a form for ordering books from the stacks and/or making reservations", which is indeed the most common way in which CIPACs link to circulation. The general category, "a link to the library's automated circulation system", was nominated in 27%, whereas only 7% believed that "a display of loan information (books in/out, overdues, fees, etc.) was offered. 9% mentioned "other" options, e.g. the transfer of call numbers from the CIPAC into the "normal" OPAC (Table C-40).

The same respondents were asked how often they had used these features in the last semester (question 21). The results in Figure 4-26 resemble those reported in the previous section on subject searching – *if CIPAC users are aware of circulation features they tend to make frequent use of these features.* About half of the respondents said they had used these features frequently (23% "very frequently" and 25% "often"), and another relatively large proportion used them occasionally (30%). Less than a quarter of the respondents used the circulation features rarely or not at all (both 11%). The sub-group results show a higher frequency of use for "type A" CIPAC users (32% "very frequently") and for respondents scoring "high" on the "index of CIPAC expertise" (44%), but they are again based upon only small sub-group numbers (Table C-41).



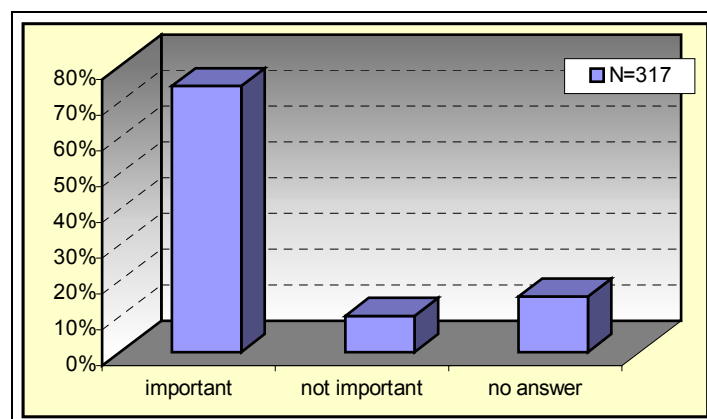
**Fig. 4-26: Frequency of use of features for circulation/loan**

The same respondents were further asked how they rated these features for circulation (loan) in terms of ease and convenience of use (question 22).



**Fig. 4-27: Rating of features for circulation/loan**

The results in Figure 4-27 show that the majority of the respondents were not complaining about the features offered although a very large proportion chose "somewhat adequate" (53%) rather than "very adequate" (23%), which means that many users were not *totally* happy with the circulation interface of their CIPACS. On the other hand, "only slightly adequate" was selected by only 17% and just 2% opted for condemnation ("not adequate at all"). However, the verbal comments to this question that were written down by a number respondents do not show much more than a diffuse criticism of the respective systems as being cumbersome or clumsy. The sub-group results indicate that the users with a higher level of CIPAC expertise rated the circulation features much better than those with a lower level (Table C-42).



**Fig. 4-28: Perceived importance of features for circ./loan**

Finally, all respondents were asked if they thought that it was important for a card-image catalogue to have features for circulation/loan like those mentioned before (ques-

tion 23). This had actually been a real question uttered by one of the participating libraries where the management was hesitant to start operating such features. The results in Figure 4-28 show that the answer is quite clear, because the vast majority of the respondents (74%) stated that such features were important. This opinion varies both with the "index of CIPAC expertise" ("high": 83% "yes", "low": 65%) and the subject areas (humanities: 81%), but not with the "type of CIPAC" user groups (Table C-43).

#### 4.3.10 General/emotional evaluation of the CIPAC approach

The final CIPAC-related question (no. 24) comprised five more or less emotional statements on the respondents' local card-image catalogues which they had to rate on a five-point scale (from "strongly agree" to "strongly disagree", with "neutral" as the mid-point). During data analysis, weights from 1 to 5 were assigned to these categories in order to compute for each statement the arithmetic mean and the standard deviation.<sup>32</sup>

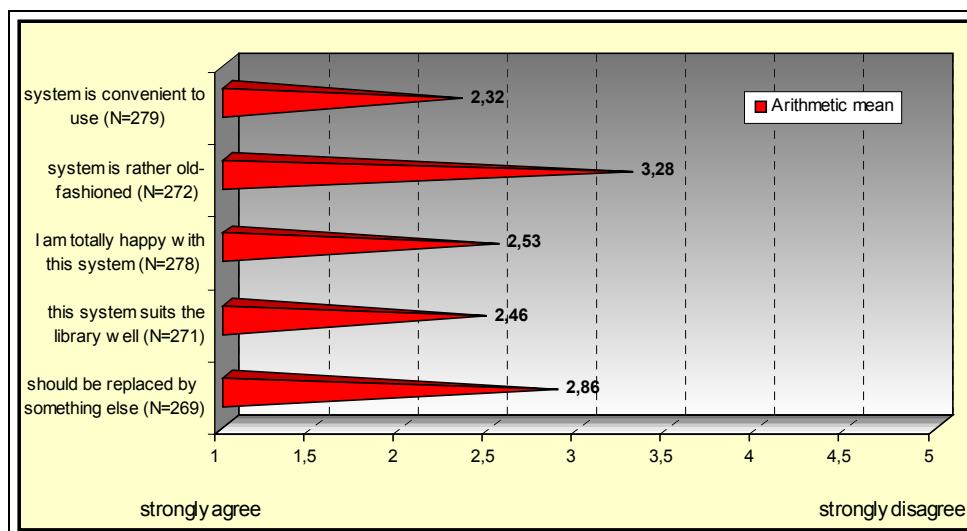


Fig. 4-29: Emotional rating of "this library's" CIPAC(s)

As shown in Figure 4-29, the resulting values indicate that many users are rather unhappy with their CIPACs. Although the respondents did not agree with the two negative statements ("this system is rather old-fashioned", "this system should be replaced by something else") they did not really reject them either. Furthermore, none of the positive statements was really accepted (all means are between two and three on the scale); the relatively best rating was given to "this system is convenient to use", the worst to "I am totally happy with this system". As Table C-44 indicates, there was generally a certain degree of disagreement between the respondents; this variation is also expressed by

<sup>32</sup> This computation was made on the basis of the number of respondents who actually rated the respective item (hence the differing Ns per item).

standard deviation values between 1.02 and 1.33. The highest degree of disagreement occurred for the statement "this system should be replaced by something else" – could this mean that some respondents feared that the replacement system could be even worse?

The sub-group results (Table C-44) show some interesting findings. First of all, the breaks show that the "type A" CIPACS received the least favourable ratings, especially in comparison with "type B". Obviously, they are the ones that users would like to see replaced by something else ("type A":  $\bar{O}$ =2.56, "B": 3.27, "C": 3.14). Second, there is only a mild correlation between the level of CIPAC expertise and these emotional ratings. And third, *librarians* rated CIPACS on all five statements more favourable than the other user categories!

The last question in the questionnaire was an open-ended one, offering space for any additional comments that the respondents might wish to make. Some of these comments had nothing to do with CIPACS (but with other library services, opening hours, loan regulations etc.), others dealt with technical or network problems, quite a few were appeals to the participating libraries (mainly the ONB) for retaining the old card cabinets. Other respondents commented on the present questionnaire (both praising and criticizing it), and some others just repeated aspects of previous questions. However, there were also a number of more or less emotional comments which are worthwhile quoting here in order to round off the above picture. A few examples follow:<sup>33</sup>

- *I am very grateful for this catalogue but it should be converted to Aleph 500 soon (ONB)*
- *Ordering from home is phantastic! Each time I gain a full day which I had to spend in the catalogue room otherwise. (ONB)*
- *Many thanks for the invaluable option of using the catalogues from home or office! (ONB)*
- *It gets on my nerves to be forced to use such medieval techniques in the 21st century and in a capital city! (UBW)*
- *Both catalogues are prehistoric, a drollery, a less-than-ideal-solution (UBW)*
- *These TIFF-catalogues are just better than nothing (UBW)*
- *It is nice that this catalogue is online available even if the system is old-fashioned and leaves many wishes open (IHS)*
- *One can't expect cow's milk from a goat! (FUB)*
- *A stopgap measure, a makeshift (UBH)*
- *A good interim solution but not more (ULB)*
- *It is real progress compared to the former need to search on-site! (SUB)*
- *This image-catalogue is better than nothing, at least it makes it possible to access the old catalogue from home and independent of the library's opening hours (SUB)*

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<sup>33</sup> Author's translation.

## 5 Review

### 5.1 Overview

This dissertation set out to investigate a special and rather unusual kind of OPAC – card-image public access catalogues (CIPACs) – and their impact on libraries and library users. The general aim of the study was to build up an informed view of this area, by looking in particular at (1) the present spreading of such catalogues and their main characteristics and navigational features, (2) the main problems and issues interconnected with the creation and implementation of CIPACs, and (3) the awareness, the behaviour and the opinions of CIPAC users, in order to gain some basic insight into the way they feel about and deal with this type of online catalogue.

In order to achieve these goals, several approaches were used. First, a comprehensive survey of existing CIPACs and their characteristics was undertaken; this also included the implementation and updating of an international CIPAC web-page. Second, the main issues in CIPAC creation and implementation were identified and discussed, based both on the relevant project literature and the answers of 23 libraries to a short unstructured questionnaire. Third, a web-based qualitative survey of 320 users of eleven CIPACs in four countries was undertaken, exploring their frequency of use, their familiarity and problems with navigation, the use of CIPACs compared with former card catalogues and "normal" OPACs, more specific features (subject searching, online ordering), as well as their general (emotional) view of card-image catalogues.

From a critical point of view, the following methodological constraints of these approaches must be kept in mind:

- (a) Although every attempt was made to identify CIPACs in all countries, the *International CIPAC List* (web-page) cannot claim to list every existing card-image OPAC. Likewise, the inventory of CIPACs on which the comparative analysis of their main features is based is not exhaustive; in some cases categories could not be filled because of language barriers,<sup>1</sup> insufficient information on CIPAC web-pages, lack of project documentation/literature. Also, the CIPAC Library Questionnaire (CLQ) covered only about half of the existing CIPACs.

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<sup>1</sup> e.g. Catalan, Lithuanian, Polish.



- (b) The study has concentrated on card-image catalogues offered by a variety of libraries in many countries. However, similar applications that may exist in the world of archives / records management, industry or other intelligence and information units have not been investigated. This was not only due to the fact that the author's research interest is focused on the library world, but also because implementations in those other fields are rarely mentioned in the literature.
- (c) The web-based survey of CIPAC users is relatively small in scale and its results do not permit generalization in a statistical sense. Also, the fact that users of eleven different CIPACs were covered did not permit to concentrate the questionnaire on specific aspects of any of these catalogues. Nevertheless, since the field has not been surveyed before, even an exploratory survey was able to provide new insights, which could be examined and quantified on a larger scale by further research.

## 5.2 Conclusions

Based upon the observations and findings presented in the preceeding chapters, the following conclusions can be drawn:

1. Although not yet a common phenomenon, CIPACs have been growing in number in the last few years. At the present time, (at least) 50 card-image online catalogues exist in (at least) 11 countries; a further increase of implementations can be expected. So far, CIPACs are predominantly, but not exclusively, a phenomenon of the German-speaking world.
2. Four main types of CIPACs have been identified, i.e. systems based on (1) binary searching, (2) on the browsing of partial indexes (guide cards, headings) or (3) virtual drawers (drawer labels), and (4) systems that permit searching of the OCR processed text of the cards. The majority of the existing CIPACs are of types (2) and (3). All four types rely on some features of the former card catalogues; whilst (1) and (4) only make use of the alphabetical sequence of the cards, (2) and (3) also exploit structural elements and search aids originally designed for one-dimensional searching.
3. Many CIPACs are large or very large catalogues; the lower limit for implementing a CIPAC seems to be in the region of 100,000 cards. Most of them are author/title catalogues; subject or classified catalogues are still rare. The image formats used for visualization are GIF and, less often, TIFF (which requires additional software). Options for

online document ordering are present in only a third of the cases; printing/downloading is often left to the browser rather than supported by the software. Online help of varying length is present on most card-image catalogues.

4. Cost, speed of creation and universal access via Internet/www are the most important reasons why libraries turn to the CIPAC approach; savings in space (getting rid of the card cabinets) and preservational aspects play also a certain role. The comparison of (inconsistently) reported cost figures leads to the assumption that for an average partial index or drawer label system the cost per card is about €0.11. Compared with "normal" conversion (€2.42–€4.23) the difference in cost is indeed striking.

5. The CIPAC software situation looks rather scattered; there is a mix of commercial and home-made solutions. The only commercial product used on a somewhat larger scale is *Chopin* which is marketed by a German vendor that also operates as a sole contractor in CIPAC projects. It seems that software is often chosen (a) by chance (low cost/no cost) or (b) by imitating existing solutions (either intentionally or not).

6. A number of technical aspects need to be considered when a library plans to implement a CIPAC. This includes preparatory work (e.g. "cleaning" the card catalogue), the question where and by whom scanning and the subsequent quality control are to be performed, the decision on the image format to be used, manual and/or intellectual input (in-house or by out-sourcing); availability of an administrative software module for modifying the CIPACs in the future. The library also needs to decide whether it wishes to undertake the project in-house or by out-sourcing parts or the whole of it.

7. Optical character recognition has not yet been widely used for CIPACs; however, the three systems based upon OCR processed text (*BerninaSpider*, *DigiKat*, *HeBIS-Retro*) look particularly promising in terms of retrieval effectiveness and user acceptance.

8. A particular challenge for CIPAC creation lies in the peculiarities of some old catalogues, such as physical form (book catalogues), rules for cataloguing/filing that may be incomprehensible for today's users, and old scripts used on handwritten cards that even librarians may not be able to read.

9. The way in which CIPACs are presented to the users leaves some wishes open, as these catalogues are named in a very inconsistent manner and rarely are integrated with OPACs and/or library web-pages. Usually, the users are left in the dark about why

CIPACS exist alongside OPACS at all. Many CIPAC libraries assume that their card-image catalogues were well received but in general they do not know much about their users.

10. In the view of the majority of the libraries currently offering CIPACS, these catalogues will be only interim solutions for the time of their ongoing retroconversion activities, or medium/long-term solutions until funds for retroconversion are available. Only in the minority of cases the respective CIPACS are considered as permanent.

11. The exploratory survey of 320 CIPAC users suggests the following hypotheses:

- CIPACS are predominantly used in the humanities and have almost no relevance for study and research in science and technology;
- they are used more likely by groups of "regulars" than by occasional users;
- users are interested in CIPACS not only for known-item searches but also for subject retrieval;
- if there are problems of getting into CIPAC use at all, they are more likely to be navigational aspects than legibility of cards, cataloguing/filing rules, computer handling etc.;
- navigation in CIPACS is not as easy as many users believe as often items looked for are not found; this applies particularly to student users;
- CIPACS which offer alphabetical indexes as entry points are seen as more user-friendly and convenient than the others, and are therefore accepted better by the users;
- CIPACS are used more frequently than the former card catalogues, mainly because of their universal availability, even if many users do not find them easier to use;
- CIPACS are not used as much as "normal" OPACS, presumably not only because of the content they offer but also due to the lack of adequate features for searching;<sup>2</sup>
- CIPAC users who are aware of other CIPACS are likely to use those quite frequently as well;
- many users are not aware of the options that their CIPACS actually offer (subject searching, online document ordering); when they are aware of such options they are rather inclined to make frequent use of such features;
- generally speaking, CIPAC users seem to appreciate the universal accessibility of card-image catalogues but not the interface(s) that these catalogues offer for navigation.

12. This dissertation has shown that the CIPAC approach has to offer much to libraries that cannot afford to convert their large old catalogues as fast as they might wish.

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<sup>2</sup> This may be different in the case of OCR based CIPACS (not covered by the user survey).

However, the absence of sophisticated search options, the problems that many users have with the interfaces offered for navigation, and the features of a past and mostly outdated generation of reference tools that these computerized card catalogues inherently carry suggest that they are at best acceptable as short or medium-term, but not as permanent alternatives to "real" OPACS.

### **5.3 Suggestions for further research**

Several aspects of the investigated area invite further research:

- The findings of the exploratory user survey call for a large-scale examination leading to results which lend themselves to quantification and generalization. As sampling will be a problem (because in the case of web-based reference tools the "population" is unknown) one of the tasks will be to design an appropriate methodological approach.
- Qualitative in-depth user studies of individual CIPACs or types of CIPACs should be undertaken in order to explore aspects which could not be covered by a multi-CIPAC survey as the one presented in this dissertation, such as how users cope with particular navigational techniques (e.g. partial indexes) or online ordering mechanisms (e.g. transferring a Zurich call number from the CIPAC to the *Aleph 500* circulation system).
- A comparative study of CIPACs and traditional card catalogues concerning retrieval effectiveness, speed, etc. could be undertaken by using an experimental approach.
- Although the majority of CIPACs are author/title catalogues, subject catalogues (both subjects headings and classified catalogues) also have been converted by using this approach. So far, neither in-depth studies of the CIPACs' capabilities for subject searching, nor of the retrieval effectiveness of card-image subject catalogues have been made.
- Finally, it would be useful to undertake an empirical evaluation of CIPACs in order to establish an instrument for comparing features and approaches for planning and implementation purposes. This would require the elaboration of a set of weighted criteria for evaluation and the empirical application of this scheme on various CIPACs, e.g. by focus groups or samples of expert users/librarians.

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<sup>1</sup> All URLs valid as of 14 May 2002.

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## Appendices

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C3	Sample welcome page .....	C/5
C4	Sample user questionnaire .....	C/6
C5	Sample CIPAC web-page with link to questionnaire .....	C/10
C6	Summary of field work .....	C/11
C7	CIPAC user survey: Tables .....	C/12

## Appendix A1: Inventory of fifty CIPACs and their main features

This section presents an overview of the fifty CIPACs (or, more accurately, CIPAC sites) that have been identified so far. As on the *International CIPAC List*, a geographical arrangement is used.<sup>1</sup> The information collected on the individual CIPACs is presented in a semi-standardized, directory-like way, i.e. by using a set of categories. In order to save space, some categories (e.g. *OCR processing*) are mentioned here only when applicable, others are listed only in the tabular presentation that follows in Appendix A2. The highlighted headings include for each CIPAC a consecutive number, the name of place/institution, as well as the year of first implementation. All data have been double-checked and, if necessary, corrected, to be up-to-date as of 1/2/2002.

### Austria (AUT)

(1)	<b>Graz: University of Arts Library</b>	<b>1997</b>
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**CIPAC web address:** <http://www.kug.ac.at/bib/>

**Contact:** Assistant Librarian <robert.schiller@kug.ac.at>

**CIPACs offered:**

- (1) *Catalogue of books* (approx. 12,000 cards)
- (2) *Printed music catalogue* (14,000 cards)
- (3) *Audio media catalogue* (approx. 7,000 cards)
- (4) *Decentral holdings catalogue* (13,000 cards)

**Technical information:**

Total no. of card-images: 47,531 (scanned on-site by student helpers)

Image format: GIF (b/w)<sup>2</sup>

Manual input: Index (based on the headings of every 5<sup>th</sup> card; student helpers)

CIPAC software: Basic HTML-solution, written in-house (by J. Fauland & G. Suppan)

**Features for navigation / retrieval:** By clicking on an index entry (left frame) the user controls the display of the card-images (a continuous sequence in the right frame).

**Features for online ordering of books:** None

**Online help:** None

**Sources:** CLQ; WWW

(2)	<b>Graz: Styrian State Library</b>	<b>2001</b>
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**CIPAC web address:** <http://one.stmk.gv.at/katzoom/>

**Contact:** Systems Librarian <adelheid.kopfauf@stmk.gv.at>

**CIPAC offered:** *Author/title catalogue –1945* (partly h/w,<sup>3</sup> filing rules: PI<sup>4</sup>)

**Technical information:**

Total no. of card-images: 239,569 (scanned by EMD, Austria)

Image format: GIF (b/w)

<sup>1</sup> By countries (three-letter ISO 3166 codes) and English place names.

<sup>2</sup> black and white

<sup>3</sup> handwritten

<sup>4</sup> Prussian Instructions (grammatical word order; see also section 3.4.2).

CIPAC software: *KatZoom* (Austrian National Library)

**Features for navigation / retrieval:** See section 2.2.1; division factor: 4 or 8 (adjustable)

**Features for online ordering of books:** None

**Online help:** Several help pages available (brief description of *KatZoom* and its basic features; contents and arrangement of the catalogue)

**Sources:** WWW

(3)	Innsbruck: University of Innsbruck Faculty of Theology Library	1999
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**CIPAC web address:** <http://c108-katj.uibk.ac.at/>

**Contact:** System Administrator, Main Library <eveline.pipp@uibk.ac.at>

**CIPAC offered:** *Jesuit Library – author/title catalogue 1500–1998* (mainly h/w; PI)

**Technical information:**

Total no. of card-images: 176,149 (scanned by EMD, Austria)

Image format: GIF (b/w)

CIPAC software: *KatZoom* (Austrian National Library)

**Features for navigation / retrieval:** See section 2.2.1; division factor: 4 or 8 (adjustable)

**Features for online ordering of books:** None

**Online help:** Several help pages available (brief description of *KatZoom* and its basic features; contents and arrangement of the catalogue)

**Sources:** CLQ; WWW

(4)	Vienna: Austrian National Library	1997
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**CIPAC web address:** <http://www.onb.ac.at/kataloge/index.htm>

**Contact:** IT Services <wilhelm.dikovich@onb.ac.at>

**CIPACs offered:**

- (1) *Author/title catalogue 1930–1991* (1,423,936 cards; filing rules: Prussian Instructions)
- (2) *Subject catalogue 1930–1991* (1,689,805 cards)
- (3) *"Old" autographs catalogue of the Manuscript Department* (138,658 cards)
- (4) *Places of printing catalogue, 1501–1800* (101,499 cards)
- (5) *Literary forms catalogue, 1501–1929* (180,445 cards)

**Technical information:**

Total no. of card-images: 3,543,343 (scanned at 200 dpi on-site by Kodak / EMD, Austria)

Image format: GIF (b/w)

CIPAC software: *KatZoom* (developed by in-house by W. Dikovich)

**Features for navigation / retrieval:** See section 2.2.1; division factor: 4

**Features for online ordering of books:** Yes (see section 2.2.1)

**Online help:** Several help pages available (a brief description of *KatZoom* and its basic features, and, for each CIPAC, separate pages on the catalogue contents and arrangement)

**Other information:**

- CIPACs (1) and (2) overlap to some extent with the library's OPAC (works published 1989–1991 can be found in both catalogues).
- Originally, two more CIPACs were offered over the web, i.e. the author/title catalogue and the subject catalogue for the period 1501–1929 (1,1 and 1,4 million cards, respectively). However, in 2000 these catalogues were converted into an *Aleph 500* OPAC, which led to the subsequent withdrawal of the CIPAC versions.<sup>5</sup>

**Sources:** Dikovich & Wilhelm (1997); Dikovich (2000); CLQ; WWW

<sup>5</sup> See also the case-study in Appendix B4.

Fig. A-1: *KatZoom* – the form for online ordering

(5)	Vienna: University of Vienna Library	1998
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CIPAC web address: [http://ub.univie.ac.at/ol\\_kat.htm](http://ub.univie.ac.at/ol_kat.htm)

Contact: Head, Cataloguing (Decentral Libraries) <johann.winkler@univie.ac.at>

**CIPACs offered:**

- (1) *Author/title catalogue 1500–1931* (a book catalogue of approx. 68,000 pages; mostly h/w)
- (2) *Author/title catalogue 1932–1988* (968,281 cards; filing rules: PI)
- (3) *Subject catalogue 1500–1931* (1,027,137 cards)
- (4) *Subject catalogue 1932–1971* (601,166 cards)
- (5) *Subject catalogue 1972–1989* (290,950 cards)
- (6) *Decentral holdings – Author/title catalogue 1972–1991* (973,009 cards; filing rules: PI)

**Technical information:**

Total no. of card-images: 3,860,543 (scanned at 200 dpi on-site by EMD, Austria), plus 67,568 images of the pages of the book catalogue (scanned from a microfiche version created in 1983)

Image format: GIF (b/w), TIFF (book catalogue only, plug-in required)

CIPAC software: *KatZoom* (Austrian National Library)

**Features for navigation / retrieval:**

- Card catalogues: See section 2.2.1; division factor: 8
- Book catalogue: See section 3.4.1; division factor: 3

**Features for online ordering of books:** None

**Online help:** Several help pages available (a brief description of *KatZoom* and its basic features, and for each CIPAC help pages on catalogue contents and arrangement)

**Sources:** Universitätsbibliothek Wien (1999; 2000); CLQ; www

(6)	Vienna: University of Economics and Business Administration Library	1999
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CIPAC web address: <http://www.wu-wien.ac.at/bib/untre/zettelkatn.html>

Contact: Sub-librarian (Reader Services) <peter.svoboda@wu-wien.ac.at>

**CIPACs offered:**

- (1) *Author/title catalogue –1930* (43,555 cards, many h/w, filing rules: PI)
- (2) *Author/title catalogue 1931–1988* (137,268 cards, filing rules: PI)
- (3) *Periodicals and serials catalogue –1988* (38,704 cards, partly h/w, filing rules: PI)
- (4) *Subject catalogue –1930* (52,192 cards, partly h/w)
- (5) *Subject catalogue 1931–1969* (67,807 cards, subject headings h/w)
- (6) *Subject catalogue 1970–1988* (73,192 cards)

**Technical information:**

Total no. of card-images: 412,718 (scanned by EMD, Austria)

Image format: GIF (b/w)

CIPAC software: *KatZoom* (Austrian National Library)

**Features for navigation / retrieval:** See section 2.2.1; division factor: 4

**Features for online ordering of books:** None

**Online help:** Several help pages available (a brief description of *KatZoom* and its basic features, and for each CIPAC help pages on catalogue contents and arrangement)

**Sources:** Wirtschaftsuniversität Wien (1999); CLQ; WWW

(7)	<b>Vienna: Austrian Museum of Applied Arts Library</b>	<b>2001</b>
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**CIPAC web address:** <http://mak.onb.ac.at/mak/>

**Contact:** <library@mak.at>

**CIPACs offered:**

- (1) *Author/title catalogue –1994* (64,809 cards, partly h/w; filing rules: PI)
- (2) *Subject catalogue –1994* (116,314 cards, partly h/w)
- (3) *Exhibition catalogue –1994* (11,071 cards, partly h/w)

**Technical information:**

Total no. of card-images: 192,194 (scanned at 200 dpi on-site by EMD, Austria)

Image format: GIF (b/w)

Manual input: Indexes (12,000 subject headings; places/years of exhibitions)

CIPAC software: *KatZoom* (Austrian National Library)

**Features for navigation / retrieval:**

- Author/title catalogue: See section 2.2.1; division factor: 8
- Other catalogues: Extended *KatZoom* features (browsing of indexes; see section 2.2.1)

**Features for online ordering of books:** None

**Online help:** Several help pages available (for each CIPAC help pages on the specific search options and on catalogue contents and arrangement)

**Sources:** CLQ; WWW

**Switzerland (CHE)**

(8)	<b>Basel: University Library</b>	<b>2001</b>
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**CIPAC web address:** [http://www.ub.unibas.ch/lib/index\\_prov.htm](http://www.ub.unibas.ch/lib/index_prov.htm)

**Contact:** <ursula.steinegger@unibas.ch>

**CIPACs offered:**

- (1) *Author/title catalogue –1939* (870,807 cards, many h/w; filing rules: PI-like)
- (2) *Theses catalogue –1980* (680,672 cards; filing rules: PI-like)
- (3) *Academic publications catalogue –1980* (University calendars, reports, etc., filed by names of locations and institutions; 5,272 cards)

**Technical information:**

Total no. of card-images: 1,556,751 (scanned at 300 dpi [1] and 200 dpi [2,3])

Image format: TIFF (b/w), visualized by Java applet technique

Manual input: Indexes (based on the headings of every 40<sup>th</sup> card)

CIPAC software: *Chopin* (Schneider / MikroUnivers, Germany)

**Features for navigation / retrieval:** See section 2.2.2, backward/forward:  $\pm 1/5/10/20$  cards

**Features for online ordering of books:** Yes (the user can also select the desired collection point from a list)

**Online help:** Several help pages available (for each CIPAC help pages on catalogue contents and arrangement; technical information on browser configuration, printing, etc.)

**Sources:** WWW

(9)	Berne: Swiss National Library	2001
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**CIPAC web address:** <http://www.coris.ch/newbns/Allemand/menu.asp>

**Contact:** <slb-bns@slb.admin.ch>

**CIPACs offered:**

- (1) *UDC subject catalogue –1990*
- (2) *Geographic subject catalogue –1990*
- (3) *Geographic subject catalogue/Maps –1990*
- (4) *Persons subject catalogue –1990*

**Technical information:**

Total no. of card-images: 1.4 million

Image format: GIF (b/w)

Manual input: Indexes (based on the tables and indexes of the UDC)

CIPAC software: GED Online (CORIS, Switzerland)

**Features for navigation / retrieval:** The user selects the desired search mode (by UDC hierarchies, UDC numbers, or subject headings), enters the search criteria (words, numbers) and decides on options such as truncation and Boolean AND (two subject headings, two UDC numbers, one heading + one number). The selected index (UDC numbers, subject headings) is then shown in the left frame, together with the number of hits for each entry. On clicking on one of these entries, the first corresponding card-image appears in the right frame, where users can browse all entries card by card (forward and backward), or by jumping to card "n" of the range retrieved.

**Features for online ordering of books:** None. Users must copy the call numbers found in this CIPAC and enter them in the Library's OPAC for ordering books from the stacks.

**Online help:** Several pages of help on the four catalogues and on navigation can be displayed in the left frame (in one sequence).

**Sources:** WWW

(10)	Berne: City and University Library	2000
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**CIPAC web address:** <http://edbessrv6.unibe.ch/de/index.htm>

**Contact:** Assistant University Librarian <christian.luethi@stub.unibe.ch>

**CIPAC offered:** "Old" author/title catalogue –1989 (1,000,871 cards in 3,763 sheafs, many of them h/w; filing rules: PI) ("DIKAT")

**Technical information:**

Total no. of card-images: 1,000,871 (scanned off-site by MikroUnivers, Germany)

Image format: TIFF (b/w), visualized by Java applet technique

Manual input: Index (based on the headings of every 40<sup>th</sup> card)

CIPAC software: *Chopin* (Schneider / MikroUnivers, Germany)

**Features for navigation / retrieval:** See section 2.2.2, backward/forward:  $\pm 1/10/50/100$  cards

**Features for online ordering of books:** Yes (including choice of desired collection point from a list)



**Online help:** Several help pages available (contents and arrangement of the catalogue; technical information on browser configuration, printing, etc.)

**Sources:** Lüthi (2000); CLQ; www

The screenshot shows a web browser window with the title 'Stadt- und Universitätsbibliothek Bern'. On the left, there are two links: 'Online-Katalog IDS Basel/Bern' and 'STUB - Hauptbibliothek'. The main content area is titled 'Buchbestellung' and contains the following fields and buttons:

- Name:
- Vorname:
- Benutzernummer:
- Band-/Jahrgangsnummer (optional):
- Ort der Abholung/Lieferung:
- Buttons: 'Daten absenden' and 'zurück'

Fig. A-2: *Chopin at Berne* – form for online ordering

(11)	<b>Luzerne: Central and University Library</b>	1999
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**CIPAC web address:** <http://zhbluzern.eurospider.ch/bernina/index.html>

**Contact:** University Librarian <niederer@zhbluzern.ch>

**CIPACs offered: "DIKAT"**

- (1) *Author/title catalogue –1970* (filing rules: PI)
- (2) *Author/title catalogue 1971–1983* (filing rules: VSB<sup>6</sup>)
- (3) *Author/title catalogue of the Civic Library –1951* (mostly Helvetica; filing rules: PI)
- (4) *Subject catalogue –1983*

**Technical information:**

Total no. of card-images: Approx. 867,000 (scanned by Cominformatic, Switzerland)

Image format: GIF (b/w)

OCR processing: Cominformatic (Switzerland)

CIPAC software: *BerninaSpider* (Eurospider Information Technology, Switzerland)

**Features for navigation / retrieval:** See section 2.2.4

**Features for online ordering of books:** None

**Online help:** Extensive help available (description of *BerninaSpider* features; contents and arrangement of each catalogue; technical information)

**Sources:** Niederer (1999); CLQ; www

(12)	<b>Luzerne: State Archives Library</b>	1999
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**CIPAC web address:** <http://staluzern.eurospider.ch/bernina/index.html>

**Contact:** <archiv@staluzern.ch>

**CIPACs offered:**

- (1) *Author/title catalogue 1971–* (filing rules: modified Swiss Rules)
- (2) *Subject catalogue 1970–*

**Technical information:**

Total no. of card-images: Approx. 80,000 (scanned by Cominformatic, Switzerland)

<sup>6</sup> Vereinigung Schweizerischer Bibliothekare, i.e. the former cataloguing rules of the Swiss Library Association.

Image format: GIF (b/w)

OCR processing: Cominformatic (Switzerland)

CIPAC software: *BerninaSpider* (Eurospider Information Technology, Switzerland)

**Features for navigation / retrieval:** See section 2.2.4

**Features for online ordering of books:** None (books for reference only)

**Online help:** Extensive help available (description of *BerninaSpider* features; contents and arrangement of each catalogue; technical information).

**Sources:** WWW

(13)	<b>Luzerne: Library of the Swiss Capuchine Order</b>	1999
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**CIPAC web address:** <http://kapuzinerbibliothek.eurospider.ch/bernina/index.html>

**Contact:** n/a

**CIPAC offered:** *Author/title catalogue 1500–* (filing rules: LThK<sup>7</sup>)

**Technical information:**

Total no. of card-images: n/a

Image format: GIF (b/w)

OCR processing: n/a

CIPAC software: *BerninaSpider* (Eurospider Information Technology, Switzerland)

**Features for navigation / retrieval:** See section 2.2.4

**Features for online ordering of books:** None (books for reference only)

**Online help:** Extensive help available (description of *BerninaSpider* features; contents and arrangement of the catalogue; technical information)

**Sources:** WWW

(14)	<b>Zurich: Central Library (=Canton, City &amp; University Library)</b>	1997
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**CIPAC web address:** <http://zbsearch.unizh.ch/bernina/>

**Contact:** <zb@zb.unizh.ch>

**CIPAC offered:** *Author/title Union Catalogue 1465–1989* (Central Library and 19 other Zurich libraries; 1.7 million documents; cards typewritten, printed and h/w; filing rules: Old Central Library Rules<sup>8</sup>)

**Technical information:**

Total no. of card-images: Approx. 2.2 million (scanned at 300 dpi by DMP, The Netherlands)

Image format: GIF (b/w)

OCR processing: DMP (The Netherlands)

CIPAC software: *BerninaSpider* (Eurospider Information Technology, Switzerland)

**Features for navigation / retrieval:** See section 2.2.4; extended version with parallel searching of the CIPAC and the *Aleph 500* Swiss Union Catalogue

**Features for online ordering of books:** Only the holdings of the Central Library can be ordered from the full display of the catalogue cards. The user needs to identify the call number on the card and to copy it into an input field beneath the card display. After clicking on an order-button the system transfers the request to the Library's *Aleph 500* circulation system.

**Online help:** Extensive help available (description of *BerninaSpider* features; contents and arrangement of the catalogue; technical information)

**Sources:** Mittendorf, Schäuble & Sheridan (1995); Schäuble (1996); Schäuble & Sheridan (1996); Anon. (1997a; 1997b); Köstler & Schäuble (1998); WWW

<sup>7</sup> LThK = Lexikon für Theologie und Kirche, Freiburg im Breisgau, 1930.

<sup>8</sup> Similar to the Prussian Instructions

## Czech Republic (CZE)

(15)	Brno: Moravian Library	1999
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CIPAC web address: <http://katalog.mzk.cz/katalog/>

Contact: Deputy Director for Strategic Planning <zabak@mzk.cz>

**CIPACs offered:**

- (1) *University Library – author/title catalogue –1950* (748,721 cards, many h/w)
- (2) *University Library – author/title catalogue 1951–1994* (1,198,293 cards)
- (3) *Pedagogical Library - author/title catalogue –1985* (322,954 cards)
- (4) *Pedagogical Library - author/title catalogue 1986–1994* (66,410 cards)
- (5) *Technological Library - author/title catalogue –1950* (51,977 cards)
- (6) *Technological Library - author/title catalogue 1951–1977* (176,138 cards)
- (7) *Technological Library - author/title catalogue 1978–1994* (124,839 cards)

**Technical information:**

Total no. of card-images: Approx. 2.67 million (scanned, in-house, at 300 dpi)

Image format: GIF (b/w)

Manual input: Indexes (based on the labels of the original drawers, each holding 1,000–1,500 cards, e.g. BRIN–BROL, BROM–BROŽE, BROŽI–BRUCH., ...)

CIPAC software: Written in-house

**Features for navigation / retrieval:** On the selection of a letter (A–Z) the system presents the corresponding section of the list of the labels of the original card drawers (see above). The selection of one such label leads to a short display (cropped images) of every 100<sup>th</sup> card of the respective drawer, a further selection to the short display of every 10<sup>th</sup> card, and a final selection to the full display of 10 cards.

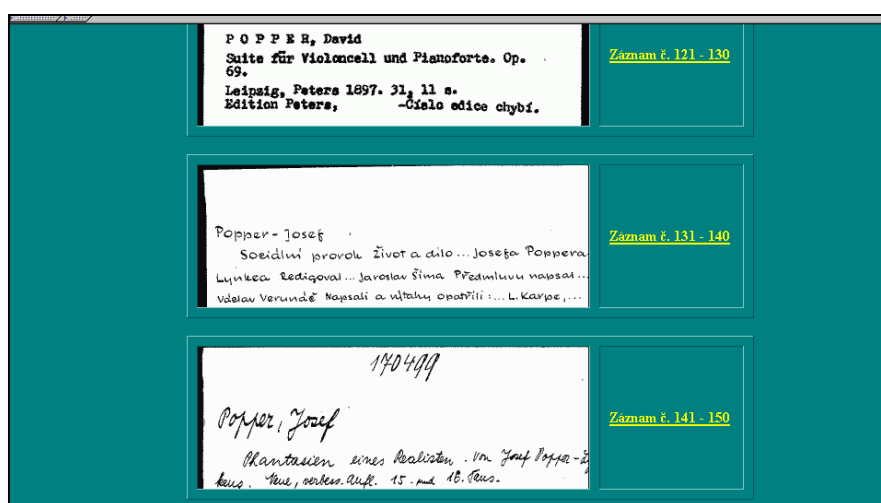


Fig. A-3: Moravian Library – short view of every 10<sup>th</sup> card

**Features for online ordering of books:** Registered users can order books through an online order form.

**Online help:** None

**Sources:** CLQ; WWW

(16)	Prague: National Library of the Czech Republic	1997
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CIPAC web address: <http://katif.nkp.cz/main.asp>

Contact: Deputy Librarian (Library Management) <bohdana.stoklasova@nkp.cz>

**CIPACs offered:**

- (1) *General catalogue 1501–1950* (author/title catalogue; 1,871,306 cards, many h/w; filing rules: PI-like)
- (2) *General catalogue 1951–1995* (author/title catalogue; 1,515,278 cards)
- (3) *General catalogue –1995* (serials/monographic sets; 144,303 cards)
- (4) *Slavonic Library catalogue* (647,061 cards)
- (5) *19<sup>th</sup> Century Bibliography* (union catalogue of Czech imprints; 97,161 cards)
- (6) *Music Division catalogue* (printed music, arranged by composers' names; 93,859 cards)
- (7) *Library Science Library catalogue 1890–1989* (LIS materials; 11,910 cards)
- (8) *Catalogue of the former Russian Foreign History Archive* (1923–1945; 38,629 cards)
- (9) *Documentation subject file* (LIS journal articles, arranged by subjects; 59,572 cards)

**Technical information:**

Total no. of card-images: 4,479,079 (scanned by Comdat, Czech Republic)

Image format: TIFF (b/w), visualized by Java applet technique (*ViewONE* by Daeja Corp.)

Manual input: Indexes (based on the labels of the original catalogue racks (e.g. A–ANF, ANG–BNČ, ..., NEN–ORGANIS, ...) and the original catalogue drawers (e.g. NEN–NEŘ, NES–NET, ...))

CIPAC software: *Katif* (Comdat, Czech Republic)

**Features for navigation / retrieval:** On the selection of a particular CIPAC a list of the labels of the original racks and, subsequently, the original drawers (see above) appears in the left browser frame. On the selection of a specific drawer a full image of the first catalogue card in this drawer is displayed in the main frame of the browser. There are flexible options for jumping forward/backward (next/last card, end/beginning of drawer, n cards backward/forward, jump to the n<sup>th</sup> card).

**Features for online ordering of books:** An online order form can be evoked from every full display. Online checking of the book's order status is also possible.

**Online help:** Brief information on the contents of each catalogue. Separate help pages are available on catalogue sorting rules and most frequently asked technical problems.

**Note:** Some records in the Library's *Aleph 500* OPAC are also linked to card-images of these CIPACs (e.g. old serial holdings).

**Sources:** Stoklasova (1999); CLQ; WWW

(17)	<b>Prague: Parliamentary Library of the Czech Republic</b>	<b>1999</b>
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**CIPAC web address:** <http://www.psp.cz/cgi-bin/eng/kps/knih/catalog.htm>

**Contact:** Project Manager <houdek@psp.cz>

**CIPACs offered:**

- (1) *Author/title catalogue 1968–1990* (some cards h/w)
- (2) *Author/title catalogue –1968* (many cards h/w)
- (3) *Periodicals/Serials Catalogue –1990* (cards mainly h/w)

**Technical information:**

Total no. of card-images: Approx. 130,000 (scanned by Comdat, Czech Republic)

Image format: GIF (b/w)

Manual input: Mini-Indexes (based on the labels of the few original catalogue drawers)

CIPAC software: Written in-house

**Features for navigation / retrieval:** The selection of one of the letters A–Z leads to a full display of the first card filed in the first drawer under this letter (e.g. "A" → "A – Aja"). Backward/forward options: ±1/10/20/50/100 cards;  $\frac{1}{4}$  –  $\frac{1}{2}$  –  $\frac{3}{4}$  (of all cards filed in the drawer).

**Features for online ordering of books:** None

**Online help:** None (almost)

**Sources:** Sosna (1997); CLQ; WWW

(18)	Prague: Library of the Academy of Sciences of the Czech Republic	1999(?)
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CIPAC web address: <http://www.lib.cas.cz/knav/lk/>

Contact: <knavcr@lib.cas.cz>

**CIPACs offered (39 catalogues):**

- (1) *General (author/title) catalogue –1992*
- (2) *Catalogues and indexes of the Academy's Institute Libraries* (38 CIPACs)

**Technical information:**

Total no. of card-images: n/a

Image format: GIF (b/w)

Manual input: Indexes (probably based on the labels of the original catalogue drawers and leader cards)

CIPAC software: Written in-house(?)

**Features for navigation / retrieval:** The selection of a letter (A–Z, e.g. "O") evokes a list of one/two-letter wordstems ("O-", "OB-", "OC-", "OČ-", "OD-", ..., "OZ-"), and a further selection a list of guide words or wordstems (e.g. for "OB": OBECNA, OBER, OBĚŤ, ..., OBUT). A mouse-click on one of these leads to the full display of the first card of the selected range, together with a list of clickable numbers of the other cards within the selected range (001, 002, 003, ..., xxx).

**Features for online ordering of books:** None

**Online help:** None

**Sources:** WWW

## Germany (DEU)

(19)	Berlin: Central and Regional Library	1998 <sup>9</sup>
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CIPAC web address: <http://ipac.zlb.de/>

Contact: Project Manager <roensch@zlb.de>

**CIPACs offered (13 catalogues):**

- (1) *Author/title catalogue –1945* (189,072 cards, mostly h/w; filing rules: PI)
- (2) *Author/title catalogue 1946–1974* (262,054 cards; filing rules: PI)
- (3) *Author/title catalogue 1975–1994* (399,156 cards; filing rules: RAK<sup>10</sup>)
- (4) *Classified catalogue 1945–1990* (1,191,762 cards)
- (5) *Catalogues of the Music Library* (5 CIPACs; 293,071 cards)
- (6) *Catalogues of the Medical Library* (3 CIPACs)
- (7) *Catalogue of DIN standards*

**Technical information:**

Total no. of card-images: Approx. 2.5 million (scanned at 200 dpi, on-site, by MikroUnivers, Germany)

Image format: GIF (b/w)

Manual input: Indexes (based on the first 15 characters of the headings of every 200<sup>th</sup> card, or every 20<sup>th</sup> card in the case of the small catalogues). For the classified catalogues, indexes based on the class names were created, as well as subject headings indexes for the classes.

CIPAC software: *Chopin* (Schneider / MikroUnivers, Germany).

**Features for navigation / retrieval:**

- Author/title catalogues: See section 2.2.2; backward/forward options: ±1/10/50 cards.
- Classified catalogues: After clicking through several hierarchical levels of classes and sub-classes, or – alternatively – a keyword search of the subject headings associated with the

<sup>9</sup> In-house via intranet: 1996

<sup>10</sup> Regeln für die alphabetische Katalogisierung (i.e. the present German cataloguing rules)

classes and sub-classes, all cards belonging to the final class are loaded and can be displayed one after the other.

- DIN standards: By DIN number and subject.

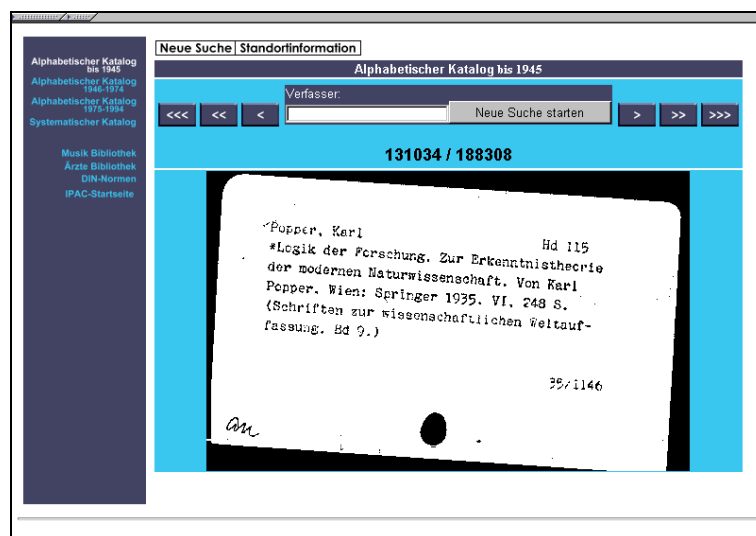


Fig. A-4: *Chopin* at Berlin Central Library – full display (GIF-image)

**Features for online ordering of books:** None

**Online help:** Only information on location codes available

**Sources:** Rönsch (1997; 1998); CLQ; www

(20)	Berlin: University Library, Freie Universität	2000
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**CIPAC web address:** <http://ipac.ub.fu-berlin.de/de/index.htm>

**Contact:** Project Manager <db@ub.fu-berlin.de>

**CIPAC offered:** *Subject catalogue –1989* (refers to 730,000 books; Berlin cataloguing rules)



Fig. A-5: *Chopin* at FU Berlin – display of subject index

**Technical information:**

**Total no. of card-images:** 1,144,495 (scanned at 200 dpi, on-site, by MikroUnivers, Germany)

**Image format:** TIFF (b/w)



**Manual input:** Index (based on the descriptors of the *first* chain of subject headings of the first card *after every leader card* of the original catalogue, i.e. every 60<sup>th</sup> card is indexed. This partial index of 18,000 entries is being enriched step by step).

**CIPAC software:** *Chopin* (Schneider / MikroUnivers, Germany)

**Features for navigation / retrieval:** See section 2.2.2; backward/forward:  $\pm 1/10/50/100$  cards

**Features for online ordering of books:** The user needs to copy the call number and bibliographical details and paste them into the "ordering from stacks" form of the Library's *Aleph 500* OPAC.

**Online help:** Extensive help available (information on the catalogue, its principles and filing rules, on the navigational features, and on technical aspects). The full display of a card-image includes an option for notifying the library of any problems with this image (e.g. legibility).

**Sources:** Braune-Egloff (2000); CLQ; WWW

(21)	<b>Berlin: Senate Library</b>	1997
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**CIPAC web address:** <http://www.senatsbibliothek.de/>

**Contact:** Librarian <direktion@senatsbibliothek.de>

**CIPACs offered:**

- (1) *Author/title catalogue –1995* (approx. 430,000 cards, partly h/w; filing rules: PI), integrated in the Library's *VTLS* OPAC
- (2) *Classified Catalogue –1995* (approx. 400,000 cards)

**Technical information:**

**Total no. of card-images:** Approx. 830,000 (scanned by EDS, Germany, and Saztec, Manila)

**Image format:** GIF (b/w)

**OCR processing:** EDS (Germany) / Saztec (Manila). Only the card-images of the author/title catalogue were OCR processed.

**Manual input:** In order to minimize OCR errors, the headings of all cards of the author/title catalogue, as well as the call numbers, were checked, corrected and transferred into the appropriate fields of the *VTLS* system; the rest of the text was transferred without corrections into one field. Furthermore, the complete subject index to the classified catalogue (20,000 cards) was keyed in and integrated in the Library's OPAC. The classification scheme was manually converted into a browse index for the CIPAC.

**CIPAC software:** Developed by EDS (Germany) / *VTLS* (USA)

**Features for navigation / retrieval:**

- Author/title catalogue: Authors and titles can be searched in the respective indexes of the *VTLS* OPAC; the full text can be searched – within the limits of OCR results – by keyword. A link for displaying the card-image is shown as part of full record display.
- Classified catalogue: After clicking through several hierarchical levels of classes and sub-classes, all cards belonging to the final class (on average, 50–200 cards) are loaded and can be displayed one after the other. Backward/forward options: first/last card,  $\pm 1/10/100$  cards.

**Features for online ordering of books:** None

**Online help:** OPAC: yes; CIPAC: no

**Sources:** Hauer (1997); Lux (1997); CLQ; WWW

(22)	<b>Berlin: Ibero American Institute (Prussian Cult. Heritage Foundation)</b>	1999(?)
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**CIPAC web address:** <http://ak1.iai.spk-berlin.de/iai/de/index.htm>

**Contact:** <info@iai.spk-berlin.de>

**CIPAC offered:** *Author/title catalogue –1994* (partly h/w, filing rules: PI-like)

**Technical information:**

**Total no. of card-images:** 1,197,727 (scanned at 200 dpi)

**Image format:** TIFF (b/w)

Manual input: Indexes (based on the headings of every 50<sup>th</sup> card)

CIPAC software: *Chopin* (Schneider / MikroUnivers, Germany)

**Features for navigation / retrieval:** See section 2.2.2; backward/forward:  $\pm 1/5/20/100$  cards

**Features for online ordering of books:** None

**Online help:** Relatively brief help page on the catalogue, its principles and how to navigate

**Sources:** WWW

<b>(23)</b>	<b>Dortmund: City and Regional Library</b>	<b>n/a</b>
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**CIPAC web address:** <http://212.93.5.226/docuware/password.htm>

**Contact:** <stlb@stadtdo.de>

**CIPACs offered:**

- (1) *Author/title catalogue –1982* (some cards h/w, filing rules: PI)
- (2) *Personalities catalogue –1982* (biographies of personalities)
- (3) *Biographical collections catalogue* (collections, compilations, handbooks; small catalogue)

**Technical information:**

Total no. of card-images: Approx. 400,000

Image format: JPEG (b/w)

Manual input: Indexes (based on the headings of every 20<sup>th</sup> card, i.e. 20,000 entries)

CIPAC software: *DocuWare*

**Features for navigation / retrieval:** After the user has typed in a search term (at least the first three characters of an author's surname or title word, plus a mandatory asterisk!), the system displays a list of matching index entries. Now the user needs to scroll to the end of the list in order to select a button ("display all pages of documents") before he/she may click on one of the index entries to see a full display of the corresponding card-image and the following ones. Backward/forward jumping:  $\pm 1$ , first/last of list, go to card "n" in display, go to entry "n" in index list.<sup>11</sup>

**Features for online ordering of books:** None

**Online help:** Extensive help pages on sorting rules and navigation available

**Sources:** WWW

<b>(24)</b>	<b>Dresden: Saxony State and Dresden University Library</b>	<b>2001</b>
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**CIPAC web address:** <http://image.slub-dresden.de/de/index.htm>

**Contact:** Head, Descriptive Cataloguing <my@slub-dresden.de>

**CIPACs offered (11 catalogues):**

- (1) *Author/title catalogue of the former Saxony State Library 1885–1973* (sheaf catalogue, approx. 628,000 slips, partly h/w; filing rules: PI; 629,969 images)
- (2) *Author/title catalogue of the former University Library –1959* (sheaf catalogue, approx. 49,900 slips, partly h/w, filing rules: PI; 49,943 images)
- (3) *Author/title catalogue of the former University Library 1957–1973* (151,546 cards; filing rules: PI)
- (4) *Catalogues of music manuscripts/old prints –1983 and 1984–2000* (approx. 34,200 cards; filing rules: PI and RAK)
- (5) *Catalogue of printed music 1977–1997* (96,200 cards; filing rules: RAK)
- (6) *Catalogue of the Stenographic Collection –2000* (approx. 22,700 cards; 2 sections: authors / anonymous works; 22,725 images)
- (7) *Author/title catalogues of the former College of Transport –1973 and 1974–1992* (approx. 260,500 cards; filing rules: PI and RAK; 260,610 images)

<sup>11</sup> There is also a "download"-button which always produces an error message when clicked.



- (8) *Classified catalogue of the former Saxony State Library –1927* (shelf-list, approx. 720,000 cards, 660,267 images)

**Technical information:**

Total no. of card-images: Approx. 1.9 million (scanned at 200 dpi, on-site [1,2] and off-site [3–8], by MikroUnivers, Germany)

Image format: TIFF (b/w)

Manual input: Indexes (based on data from every 50<sup>th</sup> card). For the classified catalogue, indexes based on the class names and descriptions were created.

CIPAC software: *Chopin* (Schneider / MikroUnivers, Germany)

**Features for navigation / retrieval:**

- Author/title catalogues: See section 2.2.2; backward/forward options:  $\pm 1/5/10/20$  cards.
- Classified catalogue: After clicking on the name of the desired main class in a list, all cards belonging to that class are loaded and can be displayed one after the other.<sup>12</sup>

**Features for online ordering of books:** Planned

**Online help:** For each catalogue, help is available on contents and arrangement. Additional help pages deal with navigation (briefly) and technical aspects.

**Sources:** Golsch & Simmich (1999); Meyer & Golsch (2001); CLQ; www

(25)	Frankfurt: HeBIS Retro Union Catalogue (City and University Library)	2000
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**CIPAC web address:** <http://retro.hebis.de/>

**Contact:** University Librarian <dugall@stub.uni-frankfurt.de>

**CIPACs offered:** The *HeBIS-Retro* Union Catalogue is a central catalogue for interlibrary loan of pre-1986/87 holdings of the eight largest libraries in the State of Hesse (Hessen). On the completion of the project (2002) it will comprise the following author/title card catalogues:<sup>13</sup>

- (1) *Senckenberg Library, Frankfurt: 1914–1985* (361,000 cards)
- (2) *Senckenberg Library: Theses, 1910–1985* (doctoral, in the sciences; 375,000 cards)
- (3) *Frankfurt City and University Library: –1985* (2,246,000 cards)
- (4) *Kassel University Library: –1986* (850,000 cards)
- (5) *Darmstadt State and University Library: 1500–1986* (1,200,000 cards)
- (6) *Giessen University Library: –1986* (1,150,000 cards)
- (7) *Fulda University and State Library: 1974–1995* (170,000 cards)
- (8) *Marburg University Library: 1930–1986* (1,355,000 cards)
- (9) *Wiesbaden State and University Library: –1980* (sheaf catalogue; 625,000 slips)

**Technical information:**

Total no. of card-images: 7.75 million (all catalogues scanned at 300 dpi, off-site, by SRZ Satz Rechenzentrum, Germany)

Image format: GIF (b/w)

OCR processing: SRZ (Germany) – all catalogues

CIPAC software: *Verity* (SRZ, Germany)

**Features for navigation / retrieval:** Author (surname, first name), title, ISBN, and fulltext keyword searching; options: righthand truncation, Boolean operators, adjacency, search range selection (one/several/all catalogues), case matching, fuzzy searching. The result of a search is a ranked short title list (author, title, library); by clicking on a short title the corresponding card-image is presented in full view (backward/forward options:  $\pm 1/5/10/20/50$  cards); if the same title is held by several libraries there are multiple displays (short and full).

**Features for online ordering of books:** When in full display mode, the user can click a button to order the book from the library shown in this full view. On the next screen he/she needs to copy the book's call number and volume number (only for multivolume works and serials) into a

<sup>12</sup> A better solution is envisaged for the future.

<sup>13</sup> CIPACs (8) and (9) were not yet available by 1/2/2002.

form and either order it from the local library (userID and password required) or place an inter-library-loan order (user account with money deposit required). It is also possible to order photocopies of a certain range of pages from books and journals.

**Online help:** Very extensive help pages available (contents, arrangement, peculiarities of the each catalogue, lending regulations, how to navigate, search, refine the search, order, etc.)

**Sources:** Dugall (2001); CLQ; www

(26)	Göttingen: State and University Library	2001
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**CIPAC web address:** [http://www.sub.uni-goettingen.de/0\\_katneu.htm#SUB](http://www.sub.uni-goettingen.de/0_katneu.htm#SUB)

**Contact:** <opacinfo@mail.sub.uni-goettingen.de>

**CIPAC offered:** *Author/title catalogue 1930–1976* (refers to approx. 900,000 books: 1946–76, theses: 1930–76, serials: 1930–45; filing rules: PI)

**Technical information:**

Total no. of card-images: 1.5 million (scanned at 400 dpi b/w by a service bureau)

Image format: GIF (b/w)

OCR: No (only used for the elimination of duplicates)<sup>14</sup>

Manual input: Indexes (based on the headings of every 50<sup>th</sup> card, and the first and last cards of every drawer)

CIPAC software: Developed by GBV Verbundzentrale (Germany)

**Features for navigation / retrieval:** When the user enters a search term, the system displays the corresponding section of the leader card index. The selection of an entry should lead to the full view of the card-image.<sup>15</sup> Backward/forward options: ±1/12/24/48. The system can also display the search history and facilitates combining sets of hits by means of Boolean operators.

**Features for online ordering of books:** Although an "order" button is available, the users are advised to copy the call numbers and enter them in the Library's OPAC, in order to receive information on correct locations and the availability of individual volumes.

**Online help:** Brief help text on one page available

**Sources:** Buschey, Halle & Harms (2001); www

(27)	Greifswald: University Library	1999(?)
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**CIPAC web address:** <http://bib.ub.uni-greifswald.de/cgi-bin/katalog/>

**Contact:** <ub@uni-greifswald.de>

**CIPACs offered:**

(1) *Author/title catalogue –1908* (397,160 cards, mainly h/w; filing rules: PI)

(2) *Author/title catalogue 1909–1973* (542,574 cards, partly h/w, filing rules: PI)

(3) *Author/title catalogue 1974–1992* (211,331 cards; filing rules: RAK)

**Technical information:**

Total no. of card-images: 1,145,065

Image format: GIF (b/w)

Manual input: Indexes (based on the headings of every 50<sup>th</sup> card)

CIPAC software: Developed by GIBTEC (Germany)

**Features for navigation / retrieval:** On the selection of one of the three CIPACs, the headings index for this catalogue appears in the left frame; it can be navigated by means of a search field (when the user enters a word stem the index jumps to the corresponding section) and browsed

<sup>14</sup> Originally, the catalogue contained more than 2.3 million cards of which approx. 813,000 were duplicates of records already in the Library's OPAC.

<sup>15</sup> Due to a hacker attack in early 2002 the system was not able to display any cards in full view at the time of the author's tests (01–02/2002).

with a scrollbar. A mouse-click on a specific heading leads to the full display of the first card in the right browser frame. Backward/forward options:  $\pm 1/5/10/25$  cards.

**Features for online ordering of books:** An order form which appears in the left frame can be evoked from the full image display. The user is required to key in his/her name, the call number of the book, and, in the case of serials, volume and year. The same form can also be used for ordering photocopies of a range of pages from a journal.

**Online help:** Help and FAQ pages on the contents of the catalogues, on navigation and on location codes available

**Sources:** WWW

(28)	Halle: Saxony Anhalt University and State Library	1999
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**CIPAC web address:** <http://zkat.bibliothek.uni-halle.de>

**Contact:** Project Manager <lutze@bibliothek.uni-halle.de>

**CIPACs offered:**

- (1) *Author/title catalogue –1929* (sheaf catalogue, 526,891 slips, mostly h/w, filing rules: PI)
- (2) *Author/title catalogue 1930–1974* (482,282 cards, filing rules: PI; 49,943 images)
- (3) *Author/title catalogue 1975–1990* (371,288 cards; filing rules: RAK)
- (4) *Theses catalogue 1800–1974* (759,876 cards, filing rules: PI)
- (5) *Theses catalogue 1975–1990* (58,461 cards, filing rules: RAK)
- (6) *Saxony-Anhalt union catalogue –1974* (899,078 cards, filing rules: PI)
- (7) *Saxony-Anhalt union catalogue 1975–1990* (311,969 cards, filing rules: RAK)
- (8) *Subject catalogue 1945–1990* (513,187 cards)
- (9) *Classified catalogue –1961* (a book catalogue of approx. 90,000 h/w pages in 178 folio volumes, arranged by the 19<sup>th</sup> century "Hartwig" classification system)

**Technical information:**

**Total no. of card-images:** Approx. 4.02 million (scanned at 300 dpi [1–8] and 400 dpi [9], off-site, by MikroUnivers, Germany)

**Image format:** TIFF (b/w); classified catalogue: JPEG (g/s)<sup>16</sup>

**Manual input:** Indexes (based on the headings of every 50<sup>th</sup> card and newly created subject headings leader cards). For the classified catalogue, an index based on the 9,000 class names was created.

**CIPAC software:** *Chopin* (Schneider / MikroUnivers, Germany)

**Features for navigation / retrieval:**

- Author/title catalogues: See section 2.2.2; backward/forward options:  $\pm 1/10/50/100$  cards.
- Classified catalogue: See section 3.4.1; backward/forward options:  $\pm 1/10/20$  pages, first or last page.

**Features for online ordering of books:** The full display of every card-image includes an "order"-button which, on mouse-click, opens a new browser window containing a form for ordering the book from the stacks. The user needs only to enter his/her personal data. The order feature is not available for the union catalogues (6,7). Classified catalogue: See section 3.4.1.

**Online help:** For each catalogue, help is available on contents and arrangement. Extensive help is provided for the classified catalogue. Additional help pages deal with location codes and technical aspects.

**Sources:** Schnelling (1998); Lutze, Schnelling & Worch (1999); Angelus, Eichhorn-Berndt & Schnelling (2000); CLQ; WWW

(29)	Hamburg: Institute of International Economics Library	1999
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**CIPAC web address:**

[http://www.hwwa.de/Kataloge/HWWA\\_Kataloge/c\\_kataloge\\_hwwa\\_kataloge\\_01.html](http://www.hwwa.de/Kataloge/HWWA_Kataloge/c_kataloge_hwwa_kataloge_01.html)

<sup>16</sup> greyscaled

**Contact:** Librarian <scherwath@hwwa.de>

**CIPACs offered:**

- (1) *Author/title catalogue 1945–1987* (705,877 cards, incl. 300,000 entries on journal articles)
- (2) *Subject catalogue 1945–1987* (approx. 2.1 million cards)
- (3) *Personalities catalogue 1908–1995* (48,693 cards, referring to approx. 800,000 newspaper cuttings on public figures)

**Technical information:**

Total no. of card-images: Approx. 2,855,000

Image format: GIF (b/w)

Manual input: Indexes (based on the headings of every 200<sup>th</sup> card). For the subject catalogue, all 20,000 subject headings were keyed in (in China).

CIPAC software: *Chopin* (Schneider / MikroUnivers, Germany). The additional features for the subject catalogue were especially developed for the Library.

**Features for navigation / retrieval:**

- Author/title catalogue and Personalities catalogue: See section 2.2.2; backward/forward options:  $\pm 1/10/25/100$  cards.
- Subject catalogue: Up to three search terms (subjects and/or geographic names which will be combined with AND) and the publication year (range from–to) may be entered.

**Features for online ordering of books:** When the user clicks on an "order"-button, he/she can choose between a form for the provision of the item in the Library's reading room, and one for ordering photocopies that will be sent to his/her address.

**Online help:** For each catalogue, a brief help text is presented on the respective search page.

**Sources:** CLQ; WWW

Fig. A-6: *Chopin* at Hamburg – Boolean searching of the headings index

(30)	Heidelberg: University Library	1998 <sup>17</sup>
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**CIPAC web address:** <http://www.ub.uni-heidelberg.de/Digikat/>

**Contact:** <ub@uni-hd.de>

**CIPAC offered: "DigiKat"**

*Author/title catalogue 1936–1985* (refers to approx. 800,000 documents; some partly with h/w corrections, filing rules: PI)

**Technical information:**

Total no. of card-images: 1,219,929 (scanned at 240 dpi by GM Consult IT GmbH, Germany)

Image format: GIF (b/w)

OCR processing: Yes<sup>18</sup>

<sup>17</sup> (Pietzsch, 1998b) claims that Heidelberg was the first German university library that implemented a CIPAC.

**Manual input:** Index (based on the headings of all cards; this index was also permuted, in order to facilitate easier browsing of the "Prussian" headings)

**CIPAC software:** Developed in-house (by E. Pietzsch)

#### Features for navigation / retrieval:

- Headings index and Permuterm index: After the user has typed a search term, the system displays (in the left frame) the corresponding part of the headings index, indicates the best match and visualizes the card-image for this entry in the main browser frame. The index can be scrolled up and down, the cards can be browsed backward/forward ( $\pm 1$ ). The user can click on the image the user to get a larger version of the same picture.
- Keyword searching: Fulltext keyword searching (of the OCR processed data) was introduced in 2001. After the user has keyed in one or several search terms, the system first displays the card-images which represent an exact match (up to 10 per page), and subsequently – if the user clicks another button – also a ranked sequence of partial matches.
- Other features: For printing/downloading purposes, individual cards can be marked and moved into a virtual basket.

**Features for online ordering of books:** Introduced in 2001 (a button that comes up with each image links to the circulation component of the Library's OPAC).<sup>19</sup>

**Online help:** Help is available on contents/arrangement of the catalogue, and on various navigational aspects.

**Sources:** Dörpinghaus (1998); Eberhardt (1998); Pietzsch (1998a; 1998b; 2001a; 2001b); CLQ; www



Fig. A-7: *DigiKat* (Heidelberg) – Top of ranked result list

(31)	Kiel: University Library	2000
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**CIPAC web address:** [http://www.uni-kiel.de/ub/gk/\\_index.html](http://www.uni-kiel.de/ub/gk/_index.html)

**Contact:** <auskunft@ub.uni-kiel.de>

#### CIPACs offered:

- (1) *Author catalogue of the decentral libraries –1993* (618,087 cards)
- (2) *Title catalogue of the decentral libraries –1993* (174,143 cards)

#### Technical information:

<sup>18</sup> It seems that the scanned images were OCR processed *twice* – first by the same service bureau that scanned the catalogue (1998), and again by the Library's automation department when the probabilistic keyword retrieval component was implemented (2001).

<sup>19</sup> Previously, the users had to copy the call numbers from the cards and re-type them into the OPAC's ordering module.

Total no. of card-images: 792,230 (scanned by a local service bureau)

Image format: GIF (b/w)

Manual input: Indexes (based on the labels of the original catalogue racks (e.g. MUCHA, OPPENI, POES, RICH, ...) and the original catalogue drawers (e.g. POES, POLG, PONT, PORTM,...))

CIPAC software: n/a

**Features for navigation / retrieval:** On the selection of one of the two CIPACS a list of the labels of the racks and, subsequently, the original drawers (see above) appears in the left browser frame. On the selection of a specific drawer a full image of the first catalogue card in this drawer is displayed in the main frame of the browser. Backward/forward options: first/last card of drawer;  $\pm 1/10/50$  or "n" cards ("n" can be keyed in by the user).

**Features for online ordering of books:** None

**Online help:** A general help sheet on the two catalogues and navigation is available.

**Sources:** Erdei (2001); www

<b>(32)</b>	<b>Kiel: Institute of World Economics Library</b>	<b>1999</b>
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**CIPAC web address:** <http://ifw.dilib.de/de/index.htm><sup>20</sup>

**Contact:** <h.schroeder@zbw.ifw-kiel.de>

**CIPACs offered:**

- (1) *Author catalogue –1985* (1,949,724 cards)
- (2) *Title catalogue –1985* (more than two authors/anonymous works, 509,206 cards)
- (3) *Name catalogue, corporate bodies –1985* (528,098 cards)
- (4) *Name catalogue, public institutions –1983* (345,963 cards)
- (5) *Classified catalogue* (Shelf-list, 145,612 cards, two sides per image)

**Technical information:**

Total no. of card-images: 3,478,603 (scanned at 200 dpi)

Image format: TIFF

Manual input: Indexes (based on the headings of every 50<sup>th</sup> card)

CIPAC software: *Chopin* (Schneider / MikroUnivers, Germany)

**Features for navigation / retrieval:** See section 2.2.2; backward/forward:  $\pm 1/10/50/100$  cards

**Features for online ordering of books:** When the user clicks on an "order"-button, he/she can choose between a form for the provision of the item in the Library's reading room, and one for ordering photocopies that will be sent to his/her address.

**Online help:** Brief help texts for each catalogue, plus *Chopin* help page on technical aspects.

**Sources:** CLQ; www

<b>(33)</b>	<b>Leipzig: University Library</b>	<b>2001</b>
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**CIPAC web address:** <http://139.18.24.18/de/Index.htm>

**Contact:** University Librarian <henschke@ub-leipzig.de>

**CIPACs offered (5 catalogues):**

- (1) *Classified catalogue 1501–1939* (book catalogue; 117,257 pages in 301 h/w folio volumes, arranged by a 19<sup>th</sup> century classification system)
- (2) *Author/title catalogue 1930–1975* (834,170 cards, filing rules: PI)
- (3) *Catalogues of the former Church College* (3 catalogues, 139,683 cards)

**Technical information:**

Total no. of card-images: 1,091,110 (scanned at 200 dpi)

Image format: TIFF (b/w); classified catalogue: JPEG (g/s)

Manual input: Index (based on the headings of every 50<sup>th</sup> card)

CIPAC software: *Chopin* (Schneider / MikroUnivers, Germany)

<sup>20</sup> Possibly a provisional address (software vendor's server)



**Features for navigation / retrieval:**

- Classified catalogue: See section 3.4.1; backward/forward options:  $\pm 1/10/50$  pages, first or last page
- Author/title catalogue: See section 2.2.2; backward/forward options:  $\pm 1/5/20/100$  cards

**Features for online ordering of books:** The full display of every image is accompanied by an "order"-button. On mouse-click, this button opens a new browser window showing a form for ordering the book from the stacks. Classified catalogue: See section 3.4.1.

**Online help:** Extensive help available (contents and arrangement of the catalogues; navigation and online ordering of books; technical information)

**Sources:** WWW

<b>(34)</b>	<b>Magdeburg: University Library</b>	<b>1999</b>
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**CIPAC web address:** <http://zkat.bibliothek.uni-halle.de/md-kat/>

**Contact:** Project Manager <lutze@bibliothek.uni-halle.de>

**CIPACs offered:**

- (1) *Author/title catalogue 1953–1987* (273,536 cards, filing rules: RAK)
- (2) *Author/title catalogue of the Humanities Faculty Library 1954-1991* (100,470 cards, filing rules: RAK)

**Technical information:**

Total no. of card-images: 374,006 (scanned at 300 dpi, off-site, by MikroUnivers, Germany)

Image format: TIFF (b/w)

Manual input: Indexes (based on the headings of every 50<sup>th</sup> card)

CIPAC software: *Chopin* (Schneider / MikroUnivers, Germany)

**Features for navigation / retrieval:** See section 2.2.2; backward/forward:  $\pm 1/10/25/100$  cards

**Features for online ordering of books:** None

**Online help:** Only one page available

**Note:** This CIPAC implementation was part of the project conducted at Halle (no. 28)

**Sources:** WWW

<b>(35)</b>	<b>Munich: Bavarian State Library</b>	<b>1997</b>
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**CIPAC web address:** <http://www.bsb-muenchen.de/opac.htm>

**Contact:** <webmaster@bsb-muenchen.de>

**CIPAC offered:**

*Author/title catalogue 1953–1981* (refers to 1.6 million books, filing rules: Old Munich Rules<sup>21</sup>)

**Technical information:**

Total no. of card-images: Approx. 2,127,000 (scanned at 300 dpi, off-site, by SRZ Satz Rechenzentrum, Germany)

Image format: TIFF (b/w)

Manual input: Index (based on the labels of the 2,495 catalogue drawers, and – as the catalogue was also re-keyed<sup>22</sup> – 21,000 "leader cards" which were mechanically generated after approx. every 100<sup>th</sup> card)

CIPAC software: *JOPAC* (SISIS, Germany)

<sup>21</sup> Similar to the Prussian Instructions

<sup>22</sup> There were several reasons for this parallelism as the Library (1) wanted to overcome the limitations for retrieval that were inherent to the old (grammatical) cataloguing rules; (2) intended to integrate the catalogue into the automated circulation system; (3) was striving for a permanent solution (no interim conversion).

**Features for navigation / retrieval:** The CIPAC is presented as a module of the Library's general OPAC. When the user clicks on a "catalogue drawer" icon, the top of the alphabetic leader card index presented. It is possible to navigate by either clicking on a letter-button (A–Z), or by typing a search term which positions the index to the matching section. A double-click on one of the index entries leads to the display of the first corresponding card-image in full format. Backward/forward options:  $\pm 1/10/25/50/100$  (adjustable). Alternatively, the user can search the "normal" OPAC and – in case the full display of a hit contains a "view card" button – request the card-image to be visualized.

**Features for online ordering of books:** None (only via the "normal" OPAC)

**Online help:** Brief help on navigation is available

**Sources:** Fabian (1997); Haller (1997); Fabian & Haller (1998); www

(36)	Potsdam: University Library – Babelsberg Library	2000
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**CIPAC web address:** <http://scout.ub.uni-potsdam.de/scans/suche.htm>

**Contact:** <webteam@info.ub.uni-potsdam.de>

**CIPACs offered:**

- (1) *Author/title catalogue 1948–1971* (partly h/w, filing rules: PI)
- (2) *Classified catalogue 1948–1971 (law)*

**Technical information:**

Total no. of card-images: Approx. 200,000

Image format: GIF (b/w)

Manual input: Indexes (approx. 4,000 entries, based on the headings of every 50<sup>th</sup> card)

CIPAC software: Developed in-house

**Features for navigation / retrieval:** When the user enters a search term, the system displays the corresponding section of the headings index. The selection of an entry opens a new browser window with a full display of the first corresponding card-image. Backward/forward options:  $\pm 1/5$ . The headings index can also be searched by keywords and Boolean operators.

**Features for online ordering of books:** None

**Online help:** Help is available on catalogue contents and arrangement, as well as on the options for navigating.

**Sources:** WWW

## Spain (ESP)

(37)	Barcelona: Library of Catalonia	n/a
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**CIPAC web address:** [http://www.gencat.es/bc/4\\_catale/set4\\_1.htm](http://www.gencat.es/bc/4_catale/set4_1.htm)

**Contact:** <wmaster@bnc.es>

**CIPACs offered:**

- (1) *Author/title catalogue 1914–1990* (partly h/w)
- (2) *Author/title catalogue, legal deposit 1982–1990*
- (3) *Subject catalogue in Spanish 1932–1981* (headings h/w)
- (4) *Subject catalogue in Catalan 1982–1990* (headings h/w)

**Technical information:**

Total no. of card-images: n/a

Image format: GIF (b/w)

Manual input: Indexes (based on the first and last headings of batches of approx. 100 cards, e.g. ABELL, LUCIA E. – ABELLA SANTAMARIA, JAIME; ABELLAN, ANTONIO M. – ABENDROTH, WOLFGANG; ...)

CIPAC software: Developed by VTLS (USA)



**Features for navigation / retrieval:** The selection of a letter (A–Z) leads to the display of the index (see above) for this letter. A mouse-click on one of the entries evokes the full display of the first card filed under this heading. Backward/forward options: first/last card;  $\pm 1/5$  cards; jump to card no. "x".

**Features for online ordering of books:** None

**Online help:** For each of the catalogues, a separate help sheet is available on contents and filing sequence.

**Sources:** WWW

## France (FRA)

(38)	Paris: Interuniversity Medical Library	1999
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**CIPAC web address:** <http://www.bium.univ-paris5.fr/>

**Contact:** <biumhist@bium.univ-paris5.fr>

**CIPAC offered:** *Author/title catalogue 1477-1952* (many cards h/w)

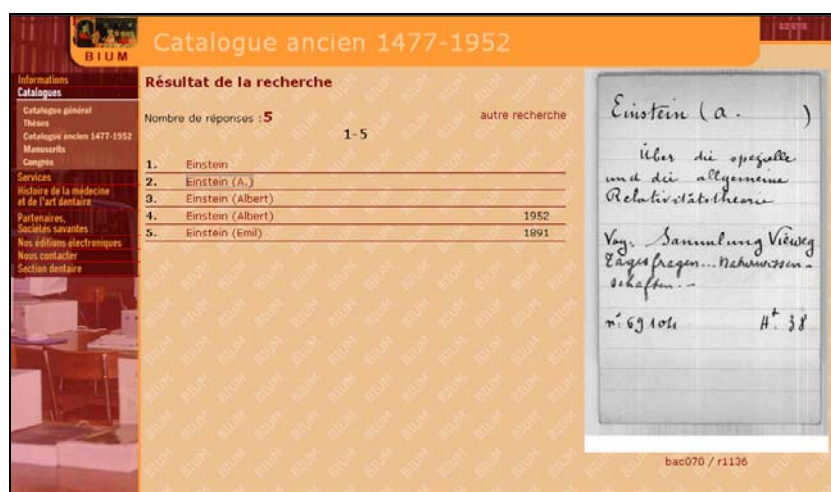
**Technical information:**

**Total no. of card-images:** Approx. 338,000

**Image format:** JPEG (b/w)

**Manual input:** Indexes (author/title, publication year, series volume no.)

**CIPAC software:** Written in-house (by D. Roberge)



**Fig. A-8: BIUM (Paris) – Display of results**

**Features for navigation / retrieval:** The interface offers four fields for searching: Last name of author (mandatory, minimum = three characters; in case of anonymous works: title), first name of author, year, series volume no. All input is automatically truncated. The result of a search is a list of headings (author/title and year, ten headings per page). On clicking on one of these headings the corresponding card-image appears in the right browser frame.

**Features for online ordering of books:** None

**Online help:** Brief help text on navigation available on main CIPAC page only

**Sources:** WWW

## United Kingdom (GBR)

(39)	Edinburgh: University Library	1996
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**CIPAC web address:** <http://datalib.ed.ac.uk/projects/scimss/>

**Contact:** Director of Collections <richard.ovenden@ed.ac.uk>

**CIPACs offered:** "SCIMMS"

- (1) *Special Collections Index of manuscripts* (54,000 slips in 180 binders, varied type-script/print)
- (2) *Tovey Collection* (no information given on size, contents, etc.)

**Technical information:**

Total no. of card-images: 54,000(?)

Image format: GIF (b/w)

OCR processing: Yes (but only two of four SCIMSS composite fields of information: name reference, pressmark)

Manual input: To supplement OCR processing.

CIPAC software: Written in-house

**Features for navigation / retrieval:** Keyword searching by the OCR'ed fields (SCIMSS)

**Features for online ordering of books:** None

**Online help:** None

**Sources:** WWW

(40)	London: British Library of Political & Economic Science (LSE)	2000
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**CIPAC web address:** <http://cardcat.lse.ac.uk/>

**Contact:** Technical Services Manager <g.price@lse.ac.uk>

**CIPACs offered:**

- (1) *Author/title catalogue –1979* (approx. 780,000 cards)
- (2) *Theses index –1979* (LSE doctoral theses; 3,151 cards)

**Technical information:**

Total no. of card-images: Approx. 780,000 (scanned by Bell+Howell, UK)

Image format: PNG (b/w)

OCR processing: No (all records are being converted by *re-keying* or by *downloading* records from external databases; completion expected by 2003)

Manual input: Index (based on the labels of the 780 original catalogue drawers, each holding approx. 1,000 cards, e.g. NOX to NZ, O to OB, OC to OSTERREICHISCHE A, ...)

CIPAC software: Written in-house

**Features for navigation / retrieval:**

- Author/title catalogue: See section 2.2.3
- Theses index: Clicking on "A–G", "H–N", or "O–Z" evokes the display of the first 10 cropped cards of the selected author range (then as above).

**Features for online ordering of books:** None

**Online help:** Extensive (how to search the catalogue; contents and arrangement of the catalogue)

**Sources:** Price (2000); CLQ; WWW

(41)	London: University of London Library	2001
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**CIPAC web address:** <http://cardss.ull.ac.uk/>

**Contact:** Head, Special Collections Cataloguing & Projects <mblackburn@ull.ac.uk>

**CIPAC offered:** *Main author/title catalogue –1979* (filing sequence: British Museum rules)

**Technical information:**

Total no. of card-images: Approx. 540,000 (scanned off-site by Bell+Howell, UK)

Image format: GIF (b/w)

Manual input: Index (based on the labels of the original catalogue drawers, e.g. PLINV to POCO, POCQ to POLD, POLE to POLYA, ...)

CIPAC software: London School of Economics (see no. 40 above)

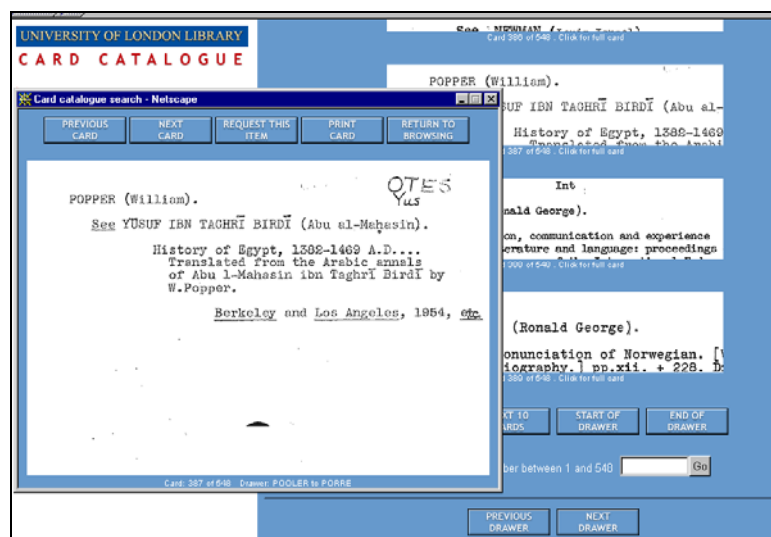


Fig. A-9: Univ. of London – full display of card in separate window

**Features for navigation / retrieval:** See section 2.2.3

**Features for online ordering of books:** Clicking on a "request this item" button (full card display) evokes an order form; the user needs only to fill in his/her name and email address, and to indicate whether or not a library member.

**Online help:** Not yet available (02/2002)

**Sources:** CLQ; WWW

## Italy (ITA)

(42)	<b>Bologna: Archiginnasio Library</b>	1999(?)
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**CIPAC web address:** <http://ba.comune.bologna.it/>

**Contact:** <archiginnasio@comune.bologna.it>

**CIPACs offered:** *Old catalogue –1960* ("Catalogo Frati-Sorbelli"; a sheaf catalogue of approx. 600,000 slips, mostly h/w, in four sections:)

- (1) *Author/title catalogue*
- (2) *Subject catalogue*
- (3) *Biographical catalogue*
- (4) *Geographic catalogue*

**Technical information:**

Total no. of card-images: Approx. 1.3 million (scanned, front and back of all slips, by CRC [Centro Regionale per il Catalogo e la Documentazione], Italy)

Image format: PNG (b/w)

Manual input: Indexes (based on the headings of all slips)

CIPAC software: *Highway* (CRC, Italy)

**Features for navigation / retrieval:** The index of each CIPAC can be searched by keywords, using right-hand truncation, character masking, and Boolean operators. Alternatively, the index

can be browsed alphabetically: The system displays the index starting at the search term that the user has typed, and also shows the frequency of hits. Several cards can then be displayed in full view on one page; there are buttons for viewing either the back of each card, or front/back on one page. A mouse-click on a card-image brings up a new browser window showing an enlarged version of that card.

**Features for online ordering of books:** None

**Online help:** Detailed help on the catalogue and on navigation available. There are also short context-sensitive help texts available on each search/browse screen.

**Sources:** Lunati (2001); www

(43)	Florence: Marucelliana Library	n/a
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**CIPAC web address:** <http://www.maru.firenze.sbn.it/PG3.htm>

**Contact:** <marucelliana@unifi.it>

**CIPACs offered (8 catalogues):**

- (1) *Author/title catalogue –1925* (book catalogue, h/w, approx. 15,000 entries)
- (2) *Author/title catalogue 1926–1993* (approx. 320,000 cards)
- (3) *Subject catalogues –1925* (2 small catalogues: general subjects / arts; approx 1,000 cards)
- (4) *Subject catalogue 1926–1993* (approx. 25,000 cards)
- (5) *Serials catalogue –1993* (approx. 8,000 cards)
- (6) *Portraits catalogue 1926–1980* (personalities depicted in books, approx. 9,000 entries)
- (7) *Printed music catalogue 1926–1970* (approx. 25,000 cards)

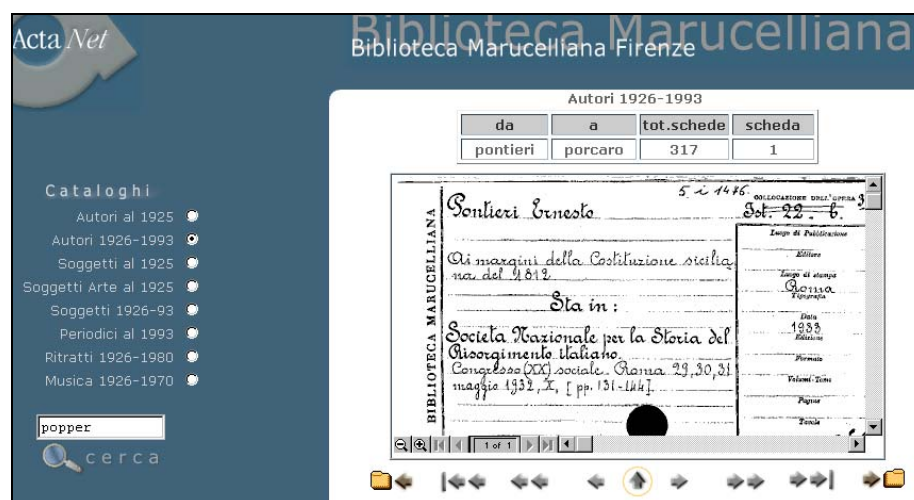
**Technical information:**

Total no. of card-images: Approx. 557,000

Image format: TIFF (b/w), plug-in required<sup>23</sup>

Manual input: Indexes (based on the labels of "virtual drawers" – probably the labels of the original catalogue drawers, e.g. "pontieri – porcario", or "sot – swe")

CIPAC software: Developed by AdActa srl (Italy)



**Fig. A-10: Marucelliana Library – display of the 1<sup>st</sup> card of a virtual drawer**

**Features for navigation / retrieval:** When the user enters a term in a search box (left frame), the software selects the matching drawer and displays, in the main frame of the browser, a full image of the first catalogue card in this range (e.g. the search term "popper" displays the first

<sup>23</sup> According to Lunati (2001, p. 19) and also to the author's personal experience, this plug-in, *Alternatiff*, comes into conflict with *Quicktime*, a plug-in often required on the www and therefore installed on many PCs; it is not Mac-compatible either.

card of the drawer labeled "pontieri – porcaro"). The number of cards in the drawer and position of the visualized card are also shown. Backward/forward options:  $\pm 1/10$  cards, first/middle/last card, last/next drawer.

**Features for online ordering of books:** None

**Online help:** Extensive help available on catalogue contents and navigation

**Sources:** Lunati (2001); www

<b>(44)</b>	<b>Florence: Uffizi Gallery Library</b>	<b>2000</b>
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**CIPAC web address:** <http://www.amanuense.it/UffiziSite/carocci/index.asp>

**Contact:** <info@amanuense.it>

**CIPAC offered:** *Fondo Carocci* (an archival documentation on artists, art, architecture, families, local history and culture of Florence and Tuscany, created around 1900; 42,867 h/w slips in 51 cassettes)

**Technical information:**

Total no. of card-images: Approx. 86,000 (scanned, front and back of all slips, by Softeam Ware, Italy)

Image format: JPEG (colour), visualized by Java applet technique (*NetVue* by AccuSoft Corp.)

Manual input: Indexes (number and name of cassette, subjects of each side of all slips)

CIPAC software: Developed by Softeam Ware (Italy)

**Features for navigation / retrieval:** After the user has keyed in a search term, the system displays a list of hits, i.e. sides of slips (name and number of the cassette where each slip is stored, as well as slip number and side). Alternatively, both the cassette and the subject index can be browsed. A mouse-click on a particular hit starts a java applet that visualizes the desired image; the user can now scroll up and down, rotate, zoom in/out etc., and even request an enlarged view in a separate browser window.

**Features for online ordering of books:** None

**Online help:** Only brief information on the catalogue and help on the java applet available

**Sources:** Lunati (2001); www

<b>(45)</b>	<b>Rome: Alessandrina University Library</b>	<b>n/a</b>
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**CIPAC web address:** <http://151.100.118.10/bua/db>

**Contact:** <alessandrina@library.beniculturali.it>

**CIPACs offered:** *Subject catalogue –1958* (mostly h/w, in three sections:)

(1) *Law*

(2) *Humanities*

(3) *Science* (not yet available online)

**Technical information:**

Total no. of card-images: n/a (two sides per image)

Image format: JPEG (b/w)

Manual input: Indexes (based on the subject headings of all cards)

CIPAC software: Developed by CASPUR (an inter-university computing consortium, Italy)

**Features for navigation / retrieval:** After the user has typed a search term, the system displays the list of all subject headings in which this term occurs, together with the corresponding card-image numbers. A mouse-click on a particular number brings up the image of both the front and the back side of the corresponding card.

**Features for online ordering of books:** None

**Online help:** None

**Sources:** Lunati (2001); www



(46)	<b>Trieste: University Library</b>	n/a
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**CIPAC web address:** <http://erl.univ.trieste.it/cgi-bin/catalogo/schedatiff?>

**Contact:** Project Manager <romano@sslmit.univ.trieste.it>

**CIPAC offered:** *Author/title catalogue –1993*

**Technical information:**

Total no. of card-images: 1,334,771

Image format: TIFF (b/w)

Manual input: None

CIPAC software: n/a

**Features for navigation / retrieval:** On the selection of a letter (A–Z) the system visualizes the full image of the card that lies in the middle of the alphabetical range of cards filed under this letter. The user decides to which part his search term belongs and clicks either "prima" (first section) or "dopo" (second section); this can be repeated until no more cards are between the one that is shown and the preceeding/following ones; alternatively, the user can browse backward/forward (1 card only).

**Features for online ordering of books:** None

**Online help:** Help available on catalogue arrangement and navigation

**Sources:** Lunati (2001); WWW

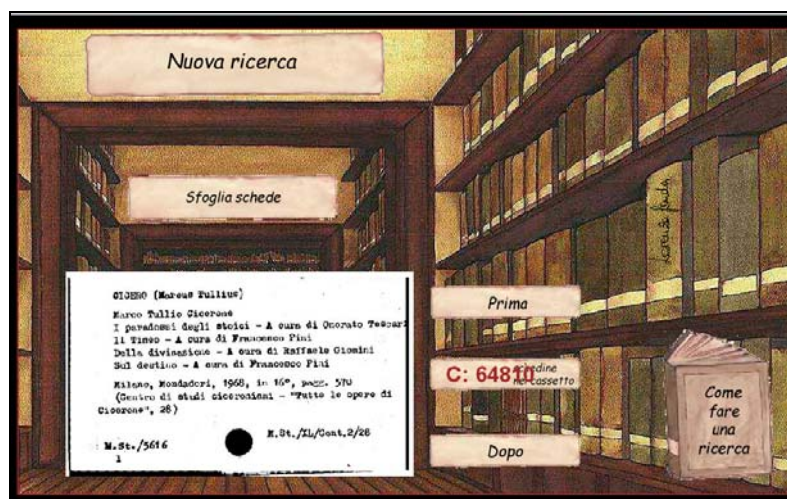


Fig. A-11: Trieste University Library – binary searching

## Lithuania (LTU)

(47)	<b>Vilnius: National Library of Lithuania</b>	1999
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**CIPAC web address:** [http://www.lnb.lt/catalogs\\_e.html](http://www.lnb.lt/catalogs_e.html)

**Contact:** Project Manager <silva@lnb.lrs.lt>

**CIPACs offered (11 catalogues):**

- (1) *Author/title catalogues –1998* (3 CIPACs: books in Lithuanian [approx. 184,000 cards], Russian [1,689,200], other languages [896,500]; many cards contain text in cyrillic letters and/or h/w additions)
- (2) *National bibliographic publications* (2 CIPACs)
- (3) *Printed music catalogues* (3 CIPACs)
- (4) *Gramophone records catalogues* (3 CIPACs)

**Technical information:**

Total no. of card-images: Approx. 2.5 million (both sides of the cards scanned)

Image format: GIF (b/w)

Manual input: Indexes (based – probably – on leader cards)

CIPAC software: n/a

**Features for navigation / retrieval:** On the selection of a letter (A–Z/Ž) the system displays in the left browser frame the index of leader cards at this position. By clicking on one of the entries, the user can request the full image of the first card filed under this heading to be displayed in the main (right) browser frame. For backward/forward browsing, the image numbers of all cards belonging to this heading are shown in the middle frame and can be clicked at wish. A mouse-click on the image opens a new browser window that shows the back of the card.

**Features for online ordering of books:** None

**Online help:** Several pages (in Lithuanian only)

**Sources:** WWW

## Poland (POL)

(48)	Cracow: Jagiellonian University Library	2000
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**CIPAC web address:** <http://pka.bj.uj.edu.pl/PKA/>

**Contact:** <ujbj@if.uj.edu.pl>

**CIPAC offered:** *Author/title catalogue –1949* (approx. 1.2 million cards, many h/w)

**Technical information:**

Total no. of card-images: Approx. 600,000 (50% of all cards; scanned at 300 dpi)

Image format: JPEG (b/w)

Manual input: Indexes (based on the original drawer labels)

CIPAC software: Developed by F.U.P. "DjaF" (Poland)

**Features for navigation / retrieval:** Selection of a drawer label from an alphabetical list.<sup>24</sup> Backward/forward options: first/last card in drawer, ±1 card, go to drawer "n", go to card "n".

**Features for online ordering of books:** None

**Online help:** Only help on catalogue contents, character set and sorting rules available.

**Sources:** WWW

## United States (USA)

(49)	Princeton, NJ: University Library	1994
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**CIPAC web address:** <http://imagecat1.princeton.edu/ECC/>

**Contact:** <web@library.princeton.edu>

**CIPACs offered:** "Supplementary Catalog"

*Dictionary catalogue –1979* (approx. 6 million cards, representing 1.75 million documents)

**Technical information:**

Total no. of card-images: Approx. 6 million (scanned at 300 dpi [scaled to 150 dpi for viewing], on-site, by student helpers)

Image format: GIF (b/w)

Manual input: Index (based on the headings of – mostly – every 200<sup>th</sup> card, which were converted into new guide cards, approx. 65,000 entries)

CIPAC software: VTLS (USA)

<sup>24</sup> Not in operation at the time of the author's tests (01-02/2002).

**Features for navigation / retrieval:** After the user has typed a term in a search box, the system displays the index of leader cards, asterisking the card which is closest to the search string. The user can browse the index backward/forward, or click on a particular entry in order to view a display of up to six cropped card-images per page (the system loads all cards filed before the next leader card and lets the user browse their cropped images in batches of six). A mouse-click on a cropped image leads to the full display of this card. Backward/forward options:  $\pm 1$ , jump to card "n". The size of the card-images can be varied by entering a decimal number (e.g. ".8" or "1.2")

**Features for online ordering of books:** None

**Online help:** Only brief contextual information navigation; separate pages on filing rules and locations/call numbers

**Note:** In January, 2001, the Library announced on its web-pages a new version of its main OPAC that would also include all records previously housed in Princeton's card catalogues, and the withdrawal of the "Supplementary Catalog" in the near future. Nevertheless, in February, 2002, the CIPAC was still available.

**Sources:** Henthorne (1995); WWW

(50)	Richmond, VA: Library of Virginia	1996
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**CIPAC web address:** <http://lvimage.lib.va.us/collections/index.html>

**Contact:** Systems Librarian <eroderick@lva.lib.va.us>

**CIPACs offered (47 catalogues and indexes):**

- (1) *Archival & library collections* (biographical, business records, genealogical, land records, maps/geographical, military records, personal papers; 40 CIPACs)
- (2) *Newspaper & periodical indexes* (7 CIPACs)

**Technical information:**

Total no. of card-images: Approx. 1.4 million

Image format: JPEG (b/w)

Manual input: Indexes (based on various types of leader cards, mostly representing 100–150 cards each, some fairly simple [e.g. "A–E", "F–M", "N–Z"], others more detailed [e.g. "Adams–Ayer", "Baker–Barber", ...].

CIPAC software: VTLIS (USA)

**Features for navigation / retrieval:** After the user has selected a particular collection (CIPAC) to be searched, the system displays the index of leader cards for this catalogue. A click on one of these index points retrieves the first card-image (full view) in the corresponding set. Backward/forward options:  $\pm 1/5$  cards, first/last card, go to card "n". In the case of some (archival) collections, images of full-text documents may be retrieved/downloaded by clicking on a button that is shown together with the card-images.

**Features for online ordering of books:** None

**Online help:** For each CIPAC, a separate page on the filing order of cards, the characteristics of the collection, and on access to the materials is available.

**Sources:** WWW

### Addendum: Past, future, demo & in-house CIPACs

- **Future CIPACs:**

- *Bochum University Library* (Germany): Announced that both their catalogue of departmental holdings and their theses catalogue are being scanned and will be made



available as CIPACs from April 2002 on, so that "the whole of the university's library holdings will be searchable on the Internet."<sup>25</sup>

- *Federal Maritime and Hydrographic Agency of Germany* (Hamburg): Has made available four card-image catalogues available on an in-house network.<sup>26</sup> However, the Library's intention to offer these catalogues over the WWW has not been realized so far.
  - *Marburg University Library* (Germany): Announced that three CIPACs will be released in Spring 2002.<sup>27</sup>
- **On CD-ROM network:**
  - *Slovenian National and University Library*: Old card catalogue.<sup>28</sup> This system features high-quality colour images in a virtual drawer system but is not intended to be used as public catalogue, mainly because all cards have also been entered into the Library's OPAC. The card-image catalogue serves primarily for research purposes and as a preservational surrogate for the old catalogue which is seen as part of the country's cultural heritage (Žumer, 1999).
- **Demo CIPAC:**
  - *Florence Central National Library*: This CIPAC of colour images is still in its infancy. A demo version which is available on the WWW<sup>29</sup> shows that this library not only intends to index all cards<sup>30</sup> and to group them by leader cards, but also to introduce features such as searching by author, title, keyword and publication year.
- **Former CIPACs:**
  - Only the first two CIPACs of the Austrian National Library have been withdrawn so far.<sup>31</sup> However, as mentioned above, the large *Princeton* CIPAC will probably also become history soon, and others might follow as time goes by.

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<sup>25</sup> <http://www.ub.ruhr-uni-bochum.de/Informationen/rubkataloge.htm> [accessed 10/02/2002]. At the time of writing, no details of this project were available.

<sup>26</sup> Approx. 350,000 cards, including a dictionary catalogue (1934–1960) and three author/title, subject and geographic locations catalogues (1961–1992); the system used is *Chopin*.

<sup>27</sup> <http://www.ub.uni-marburg.de/cat/scanhilfe.html> [accessed 10/05/2002].

<sup>28</sup> Approx. 95,000 cards, partly h/w (1774–1947)

<sup>29</sup> <http://www.bncf.firenze.sbn.it/progetti/palatino/home.htm>

<sup>30</sup> *Author/title catalogue of the Palatina Library* (225,000 bibliographic records relating to 16<sup>th</sup>–19<sup>th</sup> century books, mostly h/w)

<sup>31</sup> See the case study in Appendix B4.

## Appendix A2: Tabular comparison of fifty CIPACs

General aspects					Catalogues					Processing				Navigation								Image viewing								Other aspects		
No.	Country (ISO 3166)	Location	Library	First implem. (www)	Software or Vendor	Catalogues	Images ('000)	Author/title catalogue	Subject headings cat.	Classified catalogue	OCR	Headings / Leader cards	Drawer label indexes	Other indexes	Binary searching	Browsing of indexes	Field/keyword searching	Online ordering	Search history	Basket	Printing	Downloading	Image format	Colour	Cropped images	Jumping forw./backw.	Zooming	Rotate, invert, etc.	Setting resolution	Online help	Language of interface	Admin. module
1	AUT	Graz	Arts Lib	1997	In-house	4	48	yes	no	no	no	yes	no	no	no	yes	no	no	no	no	no	no	gif	b/w	no	no	no	no	no	no	de	no
2	AUT	Graz	State Lib	2001	KatZoom	1	240	yes	no	no	no	no	no	no	yes	no	no	no	no	no	no	no	gif	b/w	yes	yes	no	no	no	M	de	yes
3	AUT	Innsbruck	Jesuit Lib	1999	KatZoom	1	176	yes	no	no	no	no	no	no	yes	no	no	no	no	no	no	no	gif	b/w	yes	yes	no	no	no	M	de	yes
4	AUT	Vienna	Nat Lib	1997	KatZoom	5	3,543	yes	yes	no	no	no	no	no	yes	no	no	yes	no	no	no	no	gif	b/w	yes	no	no	no	no	M	de/en	yes
5	AUT	Vienna	Univ Lib	1998	KatZoom	6	3,928	yes	yes	no	no	no	yes <sup>1</sup>	no	yes	yes <sup>2</sup>	no	no	no	no	no	no	gif, tiff <sup>2</sup>	b/w	yes	no	no	no	no	M	de	yes
6	AUT	Vienna	Univ Econ L.	1999	KatZoom	6	413	yes	yes	no	no	no	no	no	yes	no	no	no	no	no	no	no	gif	b/w	yes	yes	no	no	no	M	de	yes
7	AUT	Vienna	MAK Lib	2001	KatZoom	3	192	yes	yes	no	no	yes	no	no	yes	yes	yes <sup>5</sup>	no	no	no	no	no	gif	b/w	yes	no	no	no	no	M	de	yes
8	CHE	Basel	Univ Lib	2001	Chopin	3	1,557	yes	no	no	no	yes	no	no	no	yes	no	yes	no	no	yes	yes	tiff	b/w	no	yes	yes	yes	yes	M	de	n/a
9	CHE	Berne	Nat Lib	2001	Other	4	1,400	no	no	yes	no	no	no	yes	no	yes	no	no	no	no	no	no	gif	b/w	no	yes	no	no	no	M	de/fr/it	n/a
10	CHE	Berne	Univ Lib	2000	Chopin	1	1,001	yes	no	no	no	yes	no	no	no	yes	no	yes	no	no	yes	no	tiff	b/w	no	yes	yes	no	yes	M	de	yes
11	CHE	Luzerne	Univ Lib	1999	B'Spider	4	867	yes	yes	no	yes	no	no	no	no	no	yes	no	no	no	no	no	gif	b/w	no	yes	yes	no	yes	L	de	yes
12	CHE	Luzerne	Archives Lib	1999	B'Spider	2	80	yes	yes	no	yes	no	no	no	no	no	yes	no	no	no	no	no	gif	b/w	no	yes	yes	no	yes	L	de	n/a
13	CHE	Luzerne	Capucine Lib	1999	B'Spider	1	n/a	yes	no	no	yes	no	no	no	no	no	yes	no	no	no	no	no	gif	b/w	no	yes	yes	no	no	M	de	n/a
14	CHE	Zurich	Centr Lib	1997	B'Spider	1	2,200	yes	no	no	yes	no	no	no	no	no	yes	yes	no	no	no	no	gif	b/w	no	yes	yes	no	no	XL	de	n/a
15	CZE	Brno	Moravian Lib	1999	In-house	7	2,689	yes	no	no	no	no	yes	no	yes	yes	no	yes	no	no	no	no	gif	b/w	yes	no	no	no	no	no	cs	no <sup>3</sup>
16	CZE	Prague	Nat Lib	1997	Other	9	4,479	yes	no	yes	no	no	yes	yes	no	yes	no	yes	no	no	yes	no	tiff	b/w	no	yes	yes	yes	no	M	cs/en	n/a
17	CZE	Prague	Parliament L.	1999	In-house	3	130	yes	no	no	no	no	yes	no	no	yes	no	no	no	no	no	no	gif	b/w	no	yes	no	no	no	S	cs	n/a
18	CZE	Prague	Acad Sci Lib	1999	In-house	39	n/a	yes	no	no	no	yes	yes	no	no	yes	no	no	no	no	no	no	gif	b/w	no	yes	no	no	no	no	cs/en	n/a
19	DEU	Berlin	Central Lib	1998	Chopin	13	2,400	yes	no	yes	no	yes	no	yes	no	yes	no	no	no	no	no	no	gif	b/w	no	yes	no	no	no	S	de	yes
20	DEU	Berlin	Freie Univ L.	2000	Chopin	1	1,145	no	yes	no	no	yes	no	no	no	yes	no	yes	no	no	yes	no	tiff	b/w	no	yes	yes	yes	yes	L	de	yes
21	DEU	Berlin	Senate Lib	1997	VTLS	2	830	yes	yes	yes	yes <sup>4</sup>	no	no	yes	no	yes	yes	no	no	no	no	no	gif	b/w	no	yes	no	no	no	S	de	n/a
22	DEU	Berlin	Ibero Inst Lib	1999	Chopin	1	1,198	yes	no	no	no	yes	no	no	no	yes	no	no	no	no	yes	yes	tiff	b/w	no	yes	yes	yes	yes	S	de/en/es	yes
23	DEU	Dortmund	City Lib	n/a	Other	3	400	yes	yes	no	no	yes	no	no	no	yes	no	no	no	no	no	jpeg	b/w	no	yes	yes	yes	yes	no	L	de/en/es	n/a
24	DEU	Dresden	Univ Lib	2001	Chopin	11	1,905	yes	no	yes	no	yes	no	yes	no	yes	no	no <sup>3</sup>	no	no	yes	yes	tiff	b/w	no	yes	yes	yes	yes	M	de	yes
25	DEU	Frankfurt	HeBIS-Retro	2000	Other	8	7,750	yes	no	no	yes	no	no	no	no	no	yes	yes	no	no	no	no	gif	b/w	no	yes	yes	no	no	XL	de	yes

## Appendix A2 (continued)

General aspects						Catalogues					Processing				Navigation							Image viewing							Other aspects			
No.	Country (ISO 3166)	Location	Library	First implem. (www)	Software or Vendor	Catalogues	Images (*000)	Author/title catalogue	Subject headings cat.	Classified catalogue	OCR	Headings / Leader cards	Drawer label indexes	Other indexes	Binary searching	Browsing of indexes	Field/keyword searching	Online ordering	Search history	Basket	Printing	Downloading	Image format	Colour	Cropped images	Jumping forw./backw.	Zooming	Rotate, invert, etc.	Setting resolution	Online help	Language of interface	Admin. module
26	DEU	Göttingen	Univ Lib	2001	Other	1	1,500	yes	no	no	no	yes	no	no	no	yes	no	yes	yes	n/a	n/a	n/a	gif	b/w	no	yes	n/a	n/a	n/a	S	de/en	n/a
27	DEU	Greifswald	Univ Lib	1999	Other	3	1,145	yes	no	no	no	yes	no	no	no	yes	no	yes	no	no	no	gif	b/w	no	yes	yes	no	yes	M	de	yes	
28	DEU	Halle	Univ Lib	1999	Chopin	9	4,020	yes	yes	yes	no	yes	no	yes	no	yes	yes <sup>5,6</sup>	yes	no	no	yes	yes <sup>6</sup>	tiff, jpeg <sup>6</sup>	b/w	no	yes	yes	yes <sup>6</sup>	yes	L	de	yes
29	DEU	Hamburg	Econ Inst L	1999	Chopin	3	2,855	yes	yes	no	no	yes	no	yes	no	yes	yes	yes	no	no	no	gif	b/w	no	yes	no	no	no	S	de	yes	
30	DEU	Heidelberg	Univ Lib	1998	In-house	1	1,220	yes	no	no	yes	yes	no	yes	no	yes	yes	yes	no	yes	no	gif	b/w	no	no	yes	no	no	M	de	n/a	
31	DEU	Kiel	Univ Lib	2000	n/a	2	792	yes	no	no	no	no	yes	no	no	yes	no	no	no	no	no	gif	b/w	no	yes	no	no	no	S	de	n/a	
32	DEU	Kiel	Econ Inst Lib	1999	Chopin	5	3,479	yes	no	yes	no	yes	no	no	no	yes	no	yes	no	no	yes	no	tiff	b/w	no	yes	yes	yes	yes	S	de/en	n/a
33	DEU	Leipzig	Univ Lib	2001	Chopin	5	1,091	yes	no	yes	no	yes	no	yes	no	yes	yes <sup>5,6</sup>	yes	no	no	yes	yes	tiff, jpeg <sup>6</sup>	b/w	no	yes	yes	yes	yes	L	de	n/a
34	DEU	Magdeburg	Univ Lib	1999	Chopin	2	374	yes	no	no	no	yes	no	no	no	yes	no	no	no	no	yes	no	tiff	b/w	no	yes	yes	no	yes	S	de	yes
35	DEU	Munich	State Lib	1997	Other	1	2,127	yes	no	no	no	yes	yes	no	no	yes	no	no	no	no	no	tiff	b/w	no	yes	yes	no	no	S	de	no	
36	DEU	Potsdam	Univ Lib	2000	In-house	2	200	yes	no	yes	no	yes	no	no	no	yes	yes <sup>5</sup>	no	no	no	yes	no	gif	b/w	no	yes	no	no	S	de	n/a	
37	ESP	Barcelona	Catalonia Lib	n/a	VTLS	4	n/a	yes	yes	no	no	yes	no	no	no	yes	no	no	no	no	no	gif	b/w	no	yes	yes	no	no	M	ca	n/a	
38	FRA	Paris	Med Univ Lib	1999	In-house	1	338	yes	no	no	no	no	no	yes	no	no	yes	no	no	no	no	jpeg	b/w	no	no	no	no	no	S	fr	n/a	
39	GBR	Edinburgh	Univ Lib	1996	In-house	2	54	no	yes	no	yes	no	no	yes	no	no	yes	no	no	no	no	gif	b/w	no	no	no	no	no	no	en	n/a	
40	GBR	London	BLPES	2000	BLPES	2	780	yes	no	no	no	no	yes	no	no	yes	no	no	no	no	no	png	b/w	yes	yes	no	no	no	L	en	n/a	
41	GBR	London	Univ Lib	2001	BLPES	1	540	yes	no	no	no	no	yes	no	no	yes	no	yes	no	no	no	gif	b/w	yes	yes	no	no	no	no	en	n/a	
42	ITA	Bologna	Archiginn. L.	1999	Other	4	1,300	yes	yes	no	no	yes	no	no	no	yes	no	no	no	no	no	png	b/w	no	no	yes	no	no	L	it	yes	
43	ITA	Florence	Marucelliana	n/a	Other	8	557	yes	yes	no	no	no	yes	no	no	no	no	no	no	no	no	tiff	b/w	no	yes	no	no	no	L	it	n/a	
44	ITA	Florence	Uffizi Lib	2000	Other	1	86	no	yes	no	no	yes	yes	no	no	yes	yes	no	no	no	no	jpeg	colour	yes	yes	yes	yes	no	S	it	n/a	
45	ITA	Rome	A. Univ Lib	n/a	Other	2	n/a	yes	yes	no	no	yes	no	no	no	no	yes <sup>3</sup>	no	no	no	yes	yes	jpeg	b/w	no	no	no	no	no	it	n/a	
46	ITA	Trieste	Univ Lib	n/a	n/a	1	1,335	yes	no	no	no	no	no	no	yes	no	no	no	no	no	no	tiff	b/w	no	no	no	no	no	S	it	n/a	
47	LTU	Vilnius	Nat Lib	1999	n/a	11	2,500	yes	no	no	no	yes	no	no	no	yes	no	no	no	no	no	gif	b/w	no	yes	no	no	no	S	lt	n/a	
48	POL	Cracow	J. Univ Lib	2000	Other	1	600	yes	no	no	no	no	yes	no	no	n/a	no	no	no	no	no	jpeg	b/w	no	yes	no	no	no	S	pl	n/a	
49	USA	Princeton	Univ Lib	1994	VTLS	1	6,000	yes	yes	no	no	yes	no	no	no	yes	no	no	no	no	no	gif	b/w	yes	yes	yes	no	no	S	en	n/a	
50	USA	Richmond	Virginia Lib	1996	VTLS	47	1,400	yes	yes	no	no	yes	no	no	no	yes	no	no	no	no	no	jpeg	b/w	no	yes	no	no	no	M	en	n/a	

1) the microfiche index (book catalogue) resembles a virtual drawer index

2) book catalogue only

3) planned

4) author/title catalogue only

5) text of browse index only

6) classified catalogue only

14/02/2002

## Appendix B1: CIPAC Library Questionnaire (English version)

### QUESTIONNAIRE on "Card-Image OPACS"

#### 1. Project documentation / Publications

Would you kindly let me know of (or let me have in hardcopy) any existing **publications** on your application / your project (e.g. articles, project reports, parts of annual reports, web-presentations, etc.)

If no such publications should exist, please provide a short description of your project (project date, number/type of scanned catalogues, number of cards, methods applied, realization of the project, software used, etc.)

So far I have found the following publications on your project:

Henthorne, E. (1995). Digitization and the creation of virtual libraries: the Princeton University Image Card Catalog: reaping the benefits of imaging. *Information Technology and Libraries*. 14(1). 38-40.

#### 2. "Background Information"

**2a)** Which were your **main reasons for choosing this kind** of retroconversion? What role did the following aspects play?

- cost-effective / moderately priced method
- relatively fast way of converting a card catalogue
- savings in space (getting rid of card cabinets)
- universal access to the catalogue via Internet/WWW

Did any other motives play a significant role? (please detail)

**2b)** How important was the **Internet** aspect when you were planning your conversion project? Did you plan from the outset to make the image catalogue available on the WWW, or did you originally think of other media (e.g. CD-ROM, inhouse network etc.)?

**2c)** Did your project also include the **conversion of the scanned data by OCR** (optical character recognition), or do you plan to undertake such a conversion in the foreseeable future?

If yes – please detail.

If no – why not?

**2d)** Did your project also include **manual data input** (e.g. for creating an index), or do you plan to do this in the foreseeable future?

If yes – please detail.

If no – why not?

**2e)** Which were the most relevant selection criteria concerning the **search system / the software for the user interface**? Did you possibly also consider to apply some other software / some other system (which)?

**2f)** Please provide some details concerning the costs of your application / your project. Although I am interested to learn about actual cost figures, the **comparison of the costs** of this conversion method with other approaches for retrospective conversion / cataloguing would be more important for my work.

#### 3. User Reactions and Acceptance

**3a)** What user reactions on your application / your project – **frequency of use, user satisfaction, problems that users may have with the system** – have you noticed so far?

**3b)** Have you made **any attempt to record** (systematically or not) user reactions, acceptance, criticism, e.g. by feedback forms, a complaints book, statistics, email-based feedback, a user survey etc.)? Could you possibly let me have any data or material?

#### **4. Future Plans**

What is the position of your card-image catalogue(s) with regard to the **future development** of electronic information media in your institution? To what extent do you consider your application / your project as

- a short-term solution (or even a makeshift solution?)
- a provisional solution / intermediate stage in a long-term conversion project
- a medium or long-term solution
- a permanent solution
- other (please specify)?

#### **5. Other Card-Image OPACs**

Links to all card-image OPACs that I have identified so far can be found on the following web-page: **<http://www.bibvb.ac.at/cipacs.htm>**

Do you know of any other similar scanned-image-catalogues? (please let me know any relevant web addresses!)

#### **6. Criteria for the Comparison of CIPACs**

When comparing your application / your project with other card-image OPACs – what would you consider the relevant **criteria** for such a comparison? What do you consider

- the advantages / strengths
- the disadvantages / weaknesses

of your application compared to other card-image catalogues (which catalogues)?

#### **7. Questionnaire for Users**

Would you possibly agree to support my work by creating **a temporary link** (a clickable icon) on the web-page of your card-image OPAC that would point the users of your catalogue to a questionnaire that will be used for my dissertation? The relevant period of time would be January to March 2001.

In case you would let me have such a link – **who** is the person to approach for technical support? (name, email address, telephone number)

#### **8. Other Information**

Please detail here any other aspects relevant to your application / your project.

**Thank you very much indeed for your reply!**

Please return this questionnaire

- **either** by ordinary mail to: O. Oberhauser, [postal address]),
- **or** by email (as a binary attachment) to: [email address].

## Appendix B2: CIPAC project literature / Response to the CLQ

No.	Country	Location	Library	Info	Lit.	CLQ	Date sent	Reminded	Reply received
1	AUT	Graz	Arts Lib	Yes	No	Yes	11/12/2000	12/03/2001	20/03/2001
2	AUT	Graz	State Lib	No	No	No	-	-	-
3	AUT	Innsbruck	Jesuit Lib	Yes	No	Yes	11/12/2000	n/a	29/12/2000
4	AUT	Vienna	Nat Lib	Yes	Yes	Yes	11/12/2000	09/01/2001	11/01/2001
5	AUT	Vienna	Univ Lib	Yes	Yes	Yes	11/12/2000	10/01/2001	21/03/2001
6	AUT	Vienna	Univ Econ L	Yes	Yes	Yes	11/12/2000	n/a	17/01/2001
7	AUT	Vienna	MAK Lib	Yes	No	Yes	02/05/2001	n/a	08/05/2001
8	CHE	Basel	Univ Lib	No	No	No	02/05/2001	-	-
9	CHE	Berne	Nat Lib	No	No	No	-	-	-
10	CHE	Berne	Univ Lib	Yes	Yes	Yes	12/12/2000	n/a	22/12/2000
11	CHE	Luzerne	Univ Lib	Yes	Yes	Yes	12/12/2000	13/03/2001	02/05/2001
12	CHE	Luzerne	Archives L	No	No	No	12/12/2000	-	27/12/2000*)
13	CHE	Luzerne	Capucine L	No	No	No	12/12/2000	-	-
14	CHE	Zurich	Centr Lib	Yes	Yes	No	12/12/2000	13/03/2001	-
15	CZE	Brno	Moravian L	Yes	No	Yes	11/12/2000	n/a	22/12/2000
16	CZE	Prague	Nat Lib	Yes	Yes	Yes	11/12/2000	n/a	09/02/2001
17	CZE	Prague	Parliamt. L	Yes	Yes	Yes	24/02/2001	n/a	26/02/2001
18	CZE	Prague	Acad Sci	No	No	No	11/12/2000	13/03/2001	-
19	DEU	Berlin	Central Lib	Yes	Yes	Yes	12/12/2000	17/01/2001	28/01/2001
20	DEU	Berlin	Freie Univ L	Yes	Yes	Yes	12/12/2000	n/a	27/12/2000
21	DEU	Berlin	Senate Lib	Yes	Yes	Yes	12/12/2000	n/a	29/12/2000
22	DEU	Berlin	Ibero Inst L	No	No	No	12/12/2000	n/a	27/12/2000*)
23	DEU	Dortmund	City Lib	No	No	No	-	-	-
24	DEU	Dresden	Univ Lib	Yes	Yes	Yes	12/12/2000	13/03/2001	27/03/2001
25	DEU	Frankfurt	HeBIS-Retro	Yes	Yes	Yes	29/03/2001	n/a	02/04/2001
26	DEU	Göttingen	Univ Lib	Yes	Yes	No	-	-	-
27	DEU	Greifswald	Univ Lib	No	No	No	12/12/2000	13.03.2001	-
28	DEU	Halle	Univ Lib	Yes	Yes	Yes	12/12/2000	n/a	20/12/2000
29	DEU	Hamburg	Econ Inst L	Yes	No	Yes	12/12/2000	n/a	19/01/2001
30	DEU	Heidelberg	Univ Lib	Yes	Yes	Yes	12/12/2000	n/a	19/12/2000
31	DEU	Kiel	Univ Lib	Yes	Yes	No	10/04/2001	-	-
32	DEU	Kiel	Econ Inst L	Yes	No	Yes	12/12/2000	n/a	09/01/2001
33	DEU	Leipzig	Univ Lib	No	No	No	15/05/2001	-	15/05/2001*)
34	DEU	Magdeburg	Univ Lib	No	No	No	12/12/2000	13.03.2001	-
35	DEU	Munich	State Lib	Yes	Yes	No	12/12/2000	13.03.2001	-
36	DEU	Potsdam	Univ Lib	No	No	No	12/12/2000	13.03.2001	13/03/2001*)
37	ESP	Barcelona	Catalonia L	No	No	No	-	-	-
38	FRA	Paris	Med Univ L	No	No	No	-	-	-
39	GBR	Edinburgh	Univ Lib	No	No	No	11/12/2000	13/03/2001	-
40	GBR	London	BLPES	Yes	Yes	Yes	15/05/2001	n/a	21/05/2001
41	GBR	London	Univ Lib	Yes	No	Yes	15/05/2001	n/a	16/05/2001
42	ITA	Bologna	Archiginn. L	No	No	No	-	-	-
43	ITA	Florence	Marucelliana	No	No	No	-	-	-
44	ITA	Florence	Uffizi Lib	No	No	No	-	-	-
45	ITA	Rome	A. Univ Lib	No	No	No	-	-	-
46	ITA	Trieste	Univ Lib	No	No	No	-	-	-
47	LTU	Vilnius	Nat Lib	No	No	No	-	-	-
48	POL	Cracow	J. Univ Lib	No	No	No	06/05/2001	-	-
49	USA	Princeton	Univ Lib	Yes	Yes	No	11/12/2000	17/01/2001	-
50	USA	Richmond	Virginia Lib	No	No	No	-	-	-
+1	DEU	Hamburg	Mar Agency	Yes	No	Yes	13/12/2000	13/03/2001	26/03/2001

\*) CLQ empty or declined

## **Appendix B3: System architecture/technology data for two CIPACs**

- ***KatZoom*** (Dikovich, 1998):<sup>1</sup>

### **1. Hardware**

- a) CD-ROM (containing 40–60,000 TIFF images of 6–7 KB each), input for *KatZoom*
- b) Hard disks (high-speed, SCSI); for 1.4 million cards about 21 GB of storage capacity are required
- c) Workstation (from Pentium 200 upwards)
- d) Display: VGA

### **2. Standard software**

- a) Operating system: UNIX (AIX, LINUX, SOLARIS)
- b) Server software: Standard web-server (Apache)
- c) Graphic tools: pnm-tools for image management
- d) Programming language: All modules written in Perl

### **3. Application**

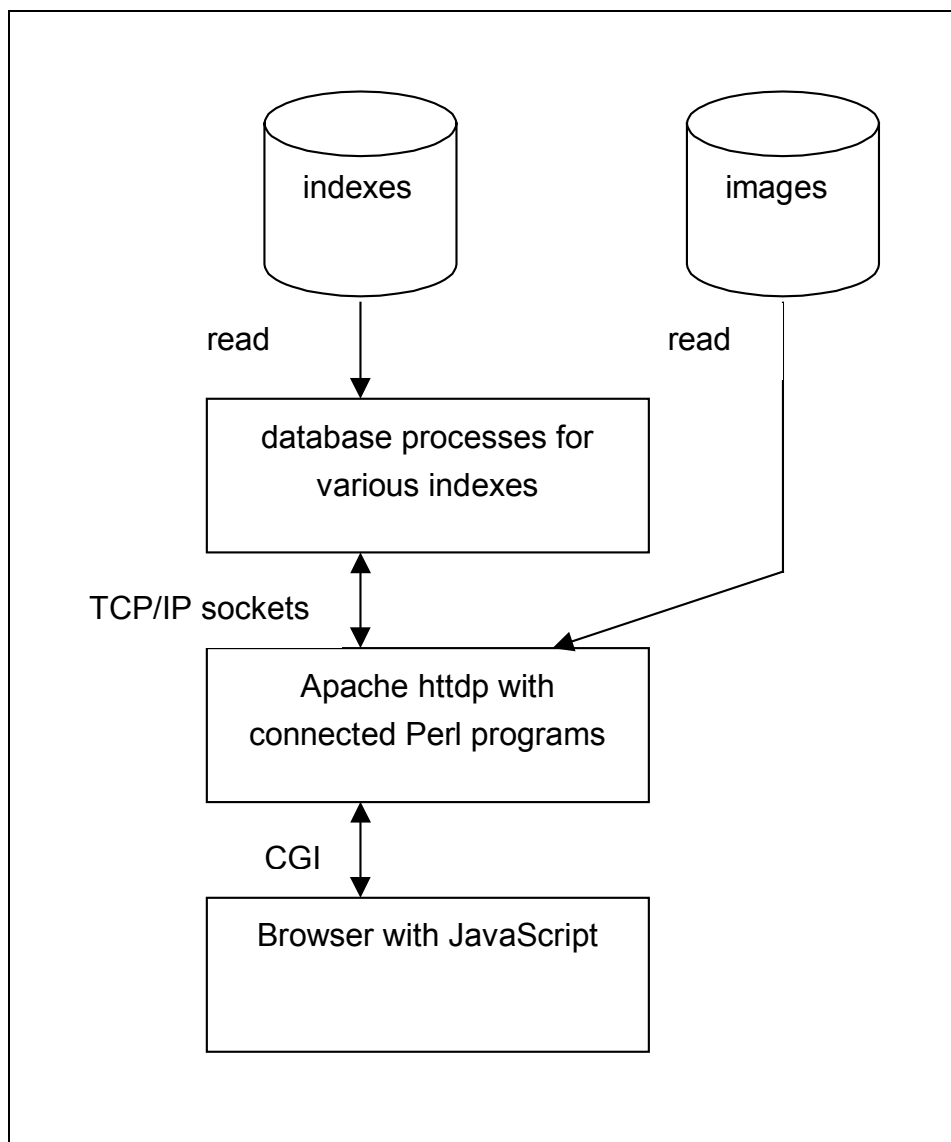
- a) Database generation
  - Step 1: Input of TIFFs, sorting, renaming (numbering), creation of various lists (number of files per CD-ROM, size of every TIFF file)
  - Step 2: Conversion of the TIFFs into GIFs; reducing the GIFs for web display; creation of cropped images for short displays
  - Step 3: Deletion of TIFFs; creation of various indexes (logical and physical positions of cards)
- b) Opac: Based on CGI-scripts written in Perl
- c) Management tools: CGI scripts for system administration
- d) Administrative tools: Perl tools for enabling cataloguers to add new cards, delete cards, etc. via a web interface

- ***DigiKat*** (Pietzsch, 1998c)

This system developed at the Heidelberg University Library is based on the multi-layer client/server architecture shown in Figure B-1.

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<sup>1</sup> Author's translation.



**Fig. B-1: *DigiKat* system architecture<sup>2</sup>**

The core of the system is a set of Perl scripts connected to the httpd-server via Apache-Perl in a way that for each current httpd process a set of compiled Perl scripts is waiting in the main memory for being called. These scripts are responsible both for communication with the user and for database retrieval. The actual reading from the databases is performed by server processes (Perl scripts with *Berkeley-DB* database system modules) which are daemons waiting for requests. All programs, daemons and the whole database are always located in an adequately sized central memory, whereas disk access is needed only for the image files. For the use of the web interface a browser with JavaScript capability is required.

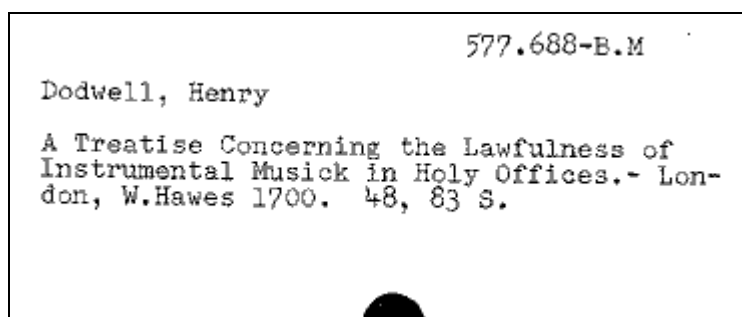
<sup>2</sup> Source: Pietzsch (1998b, p. 492); text originally in German (author's translation).



## Appendix B4: Using CIPACs for the creation of an OPAC – a case study

This case study of the Austrian National Library (ONB) shows how – under the right circumstances – CIPACs can be converted into "normal" OPACs.<sup>1</sup> As mentioned in section 3.6, the ONB considers its CIPACs as short-term solutions and plans to convert all of them into "normal" OPACs within the next few years. Two of the Library's major card catalogues – an author/title and a subject catalogue, both covering the period from 1501 to 1929 – have already ended their relatively short lives as CIPACs, to become *one single OPAC* featuring a limited set of categories, full-text searching, and subject access.

The original 1501-1929 author/title catalogue is a handwritten sheaf catalogue on large slips, stored in hundreds of cassettes. In the 1960s, it was completely typed on 7.5 x 12.5cm cards and also shortened to an extent (Figure B-2). This typewritten version of approximately 1.1 million cards was used for digitization when the ONB implemented its first *KatZoom* CIPAC in 1997.<sup>2</sup> For this catalogue, only one kind of typeface had been used and underlining had been applied only sparingly, so that OCR processing of the TIFF images looked promising. Initial tests yielded indeed very good results.



**Fig. B-2: A card from the typewritten catalogue**

The same service agency that had scanned the cards was then hired for converting the images by OCR techniques. After the conversion, all records were manually checked and broken down (by tagging) into three paragraphs, i.e. the *call number*, the *heading* (in most cases an author's name), and the *rest* of the card's text. A high degree of accuracy was requested by the Library (100% for call numbers and headings, 99.5% for the rest). Characters that could not be corrected by bureau staff – e.g. illegible or Greek letters – were replaced by hexadecimal codes to be checked and corrected by librarians during a later phase of the project. The resulting data were supplied to the ONB's IT department where a number of further checks and routines were applied. These included "weeding" of the headings (e.g. by removing administrative notes), merging of continuous cards, tagging distinct paragraphs as "footnotes" and separating cards that contained cross references. The records were then loaded into an *Allegro-C*<sup>3</sup> database for further inspection by library staff.

<sup>1</sup> This account is based on Dikovich & Wilhelm (1997); Dikovich (2001a; 2001b); Zabel (2000); CLQ.

<sup>2</sup> See also section 2.2.1

<sup>3</sup> *Allegro-C* is a bibliographic database software created by the Brunswick University Library (Germany).

Meanwhile, the idea had taken shape of merging the 1501-1929 subject catalogue with the author/title catalogue. Subsequently, also this catalogue of some 1.4 million cards<sup>4</sup> was OCR processed. In order to automatically detect the corresponding cards, the text file of the author/title catalogue was indexed and a number of probabilistic and fuzzy logic methods were applied for textual comparison and the calculation of ranked weights that indicated the likelihood of correspondence between the cards from the two catalogues. In only less than 10 percent this procedure did not lead to a reliable identification of the matching cards; in these cases the software listed the ten best matches so that bureau staff could make a decision. If this was not successful either, the correct match had to be searched manually. Only in a small number of cases no matching cards were found so that the respective subject cards had to be eliminated. Finally, the ONB received a concordance file that related to the image number of each author/title card the image numbers of "n" subject cards. The Library's IT department performed the same checking routines as developed for the first catalogue on the subject headings and created appropriate software for decomposing of longer headings (chains) into single descriptors.

In early 2000, after the ONB's new library automation system (*Aleph 500*) had been implemented, both catalogues were loaded – still as two separate files – onto the new system. This was the prerequisite for the most tedious part of the project, i.e. the manual correction by library staff of all those characters in the call number and headings sections that had been marked as "dubious" by the previously applied checking routines. Also, each single case where the software had detected continuing cards had to be checked and corrected by hand.

Only then the two catalogues were exported from Aleph 500, brought together by using a category scheme tailored for the merged catalogue, and eventually loaded as *one unified OPAC* on the Aleph 500 system. Yet another round of partly computer-supported corrections<sup>5</sup> was to follow before the ONB finally released its new OPAC to the public in October 2000.<sup>6</sup> Obviously, this new OPAC does not offer the same field structure as the "normal", MAB-based<sup>7</sup> 1992– OPAC, but it still features limited field searching, full-text searching, and online document ordering. Above all, the user interfaces of both online catalogues are looking very much alike.

Shortly after the implementation of the new OPAC, the two CIPACs that covered the period 1501–1929 were withdrawn; they had been offered since 1997/98. Although they continue to exist somewhere behind the scenes, the public is not shown the card-images any longer (Figure B-3). However, library staff who are using a different interface for cataloguing and administrative purposes, are shown a full display with a link to the original GIF-images (Figure B-4).

---

<sup>4</sup> A card of the author/title catalogue could have several corresponding cards in the subject catalogue.

<sup>5</sup> 2,650 corrections were made by hand on the basis of systematic error checking of call numbers and headings, and 29,000 errors were corrected automatically on the basis of previously conducted plausibility checks (e.g. "1" for "l", "0" for "o" in call numbers).

<sup>6</sup> <http://www.onb.ac.at/ALEPH/-/start/onbak>

<sup>7</sup> MAB is the German equivalent of MARC.

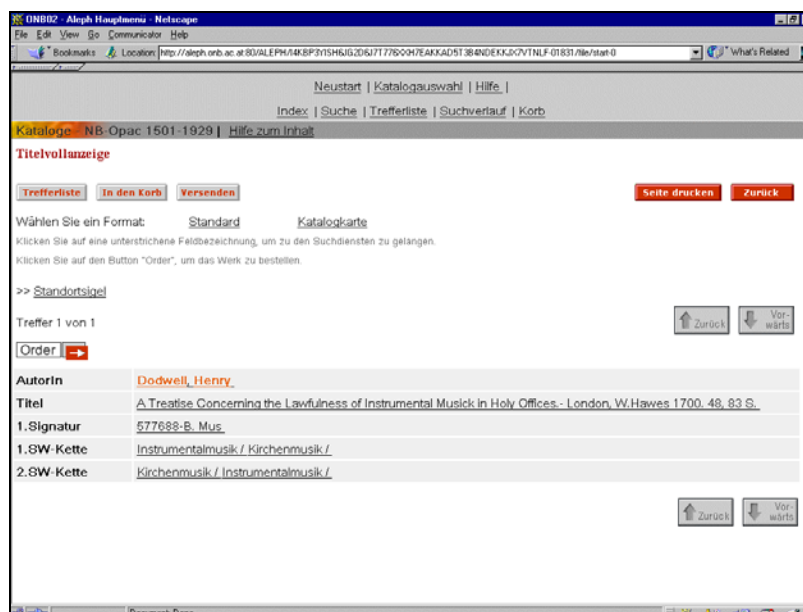


Fig. B-3: The same record as displayed in the new OPAC

After some further amendments<sup>8</sup> the project was finally declared completed in September 2001. As the remaining CIPACs – above all the two large catalogues for the 1930–1991 period – do not lend themselves to OCR-processing,<sup>9</sup> the ONB is considering alternative measures for their conversation. It seems most likely that both catalogues will be re-keyed by using a similar simple field structure (call number, heading, rest) as in the case of the first two catalogues. At the time of writing, the Library is looking for off-shore keyboarding vendors that offer such services at very reasonable cost (see also Perez, 1998). It is envisaged that by mid-2003 the public will be offered the data as part of the ONB's Aleph OPAC.

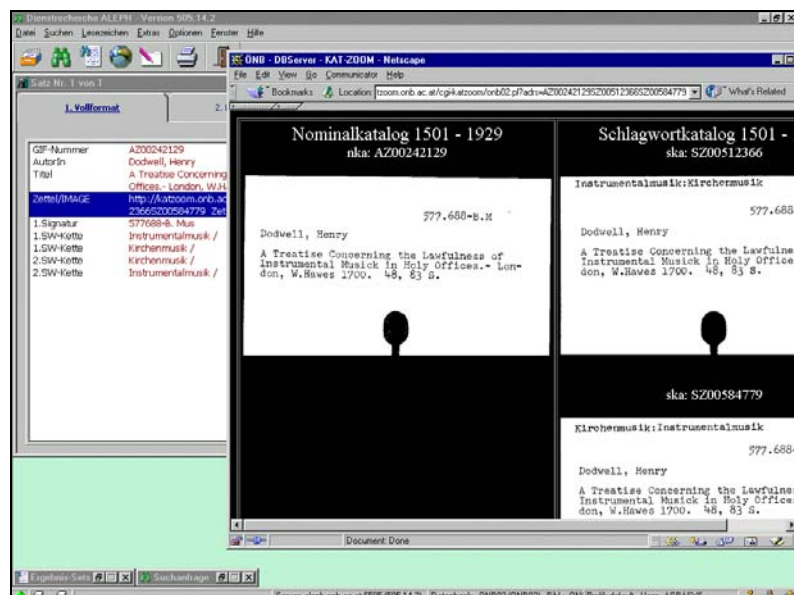


Fig. B-4: The same record (cataloguers' interface), with links to the original CIPAC images

<sup>8</sup> Replacing of location codes in call numbers by text, decomposing complex call numbers into subfields.

<sup>9</sup> Mainly because of the large variety of typefaces and printed letters used during the sixty years of cataloguing, as well as a large number of handwritten additions and notes.

## Appendix C1:

### Topics in the user survey

#### (provisional operationalization)

("What do I want to know from CIPAC users?",  
31.12.2000)

#### 1 Characteristics of the respondent

- 1.1 From where did the respondent get linked to this questionnaire? (which library, which CIPAC)
  - there may be no need to ask this as it may be implicitly known (through the links, the script, etc.)
- 1.2 Respondent's status
  - student
  - academic teacher / researcher
  - librarian
  - other
- 1.3 Respondent's subject area
  - humanities, social sciences
  - law, economics, business administration
  - science
  - engineering, technology
  - medicine

#### 2 Frequency of CIPAC use

- 2.1 Does the library offer more than one OPAC of the CIPAC type?
  - If yes: Which one has been used most recently?
- 2.2 How often does the respondent use this CIPAC?
- 2.3 How often does the respondent use other "local" CIPACs (if there are more than one)?
- 2.4 How often does the respondent use other "non-local" CIPACs (which ones)?
- 2.5 How often does the respondent use CIPACs compared with "normal" OPACs?

#### 3 Familiarity with CIPACs

- 3.1 When using this CIPAC for the first time, did the respondent immediately (intuitively) know how to use it (operate, navigate) or did this take some time? What exactly was the problem?

- 3.2 Which CIPAC-specific features did the respondent experience as difficult getting used to?
  - how to get to the right (proper, desired, most appropriate) alphabetical entry points
  - browsing/navigating/jumping forward and backward
  - the catalogue-specific ordering rules actually work
  - reading the card-images, especially those of hand-written cards
  - other aspects (which ones)

- 3.3 Does the respondent now (at this time) see himself / herself as an experienced or an inexperienced user of this CIPAC?

- 3.4 How does the respondent rate this CIPAC concerning the following aspects?
  - user-friendliness / ease of use
  - *efficiency (browsing, searching)*
  - performance speed
  - quality / legibility of card image
  - provision of online help

#### 4 CIPACs versus original card catalogues

- 4.1 Does the respondent use this CIPAC
  - more often, or
  - less frequently
  - than the original card catalogue? (Did he / she use the original card catalogue at all?), and
  - what are the reasons for this?
- 4.2 According to the respondent's view, is this CIPAC
  - easier, or
  - more difficult
  - to use than the original card version (or card catalogues in general), and
  - what are the reasons for this judgement?
- 4.3 Does, in the respondent's view, this CIPAC offer certain features (for searching, navigating, displaying) that the original card catalogue did not have? Which features and how important are they?

#### 5 CIPACs versus "normal" online catalogues

- 5.1 When comparing this CIPAC with "normal" OPACs, does the respondent see any (major) deficiencies of the CIPAC?

- 5.2 Does the respondent feel that this CIPAC has any features superior to "normal" OPACs?
- 6 This CIPAC versus other CIPACs**
- 6.1 Is the respondent familiar with any other CIPACs? (see also 2.4)  
If no, go to 7.1
- 6.2 In the respondent's view, does this CIPAC rate more or less favourable than the other(s) in the following aspects:
- user-friendliness / ease of use
  - *efficiency (browsing, searching)*
  - performance speed
  - quality / legibility of card image
  - provision of online help
- 6.3 Does this CIPAC offer any features that other CIPACs do not have? (Which features and how important are they?)
- 6.4 Do other CIPACs offer any features that this CIPAC does not have? (Which features and how important are they?)
- 7 Subject access**
- 7.1 Does this CIPAC – to the respondent's knowledge – also offer any options for subject searching:
- searching for title words
  - searching a separate subject headings catalogue
  - searching a separate classified catalogue
  - other (what)
- 7.2 If no: Go to **8.1**  
If yes: How often does the respondent use this feature?
- 7.3 Positive experiences with subject search features
- 7.4 Negative experiences with subject search features
- 8 Interface to circulation (loans) module**
- 8.1 Does this CIPAC – to the respondent's knowledge – provide any sort of interface to the library's circulation (loans) system?
- 8.2 If no: Go to **8.4**  
If yes: How often does the respondent use this feature?
- 8.3 How does the respondent rate this feature in terms of ease and convenience of use?
- 8.4 How important is this option (would this option be) for the respondent?
- 9 Integration of the CIPAC into the general web-OPAC**
- 9.1 Has this CIPAC been implemented in a way that actually integrates it somehow into the "normal" web-based library OPAC? If yes: How does the respondent like this?
- Note:* This kind of integration exists only in a few cases (e.g. Bavarian State Library, Zurich Central Library); it will depend on the co-operation of these libraries if the inclusion of this question actually makes sense.
- 10 General evaluation of the CIPAC approach**
- 10.1 "Several libraries have decided to digitize their card catalogues and make these images available on the web, because this can be done at a faster speed and considerably lower cost than by re-cataloguing large quantities of catalogue cards". Does the respondent think that in the case of this CIPAC the approach has made sense (has been a successful one), and why does he / she believe so?
- 10.2 How does the respondent agree (on a scale, maybe polarities) with emotional statements such as:
- This CIPAC is a very modern (a rather old-fashioned) system.
  - This is a very convenient (a very inconvenient) system.
  - This system is well suited (not suited at all) to the library.
  - This system should be kept as it is (should be replaced by some other system).
  - I am absolutely happy (totally unhappy) with this system.
- 11 Thanks for filling in the questionnaire and space for any further comments**

## Appendix C2: Details of questionnaire design

As mentioned in section 4.1.3, the creation of the questionnaire relied in many respects on the recent book by Dillman (2000). Both the ideas and the practical advice provided by this expert on self-administered questionnaires were followed to a great extent. First, this applies to Dillman's principles for *writing* survey questions, e.g. "Use equal numbers of positive and negative categories for scalar questions" (principle 2.6), "Eliminate check-all-that-apply question formats to reduce primacy effects" (2.10), "Avoid double-barrelled questions" (2.17). All this should help to achieve the goal – "to develop a query that every potential respondent will interpret in the same way, be able to respond to accurately, and be willing to answer" (ibid., p. 33). Second, the principles for *constructing* the questionnaire were to be observed, e.g. "Place items with the same response categories into an item-in-a-series format" (3.3), "Number questions consecutively and simply, from beginning to end" (3.9), or "List answer categories vertically instead of horizontally" (3.19). This also includes the ordering of the questions: A self-administered questionnaire should be "like a conversation", with the questions ordered in a way that will be logical to the respondent and a grouping together of questions that have similar component parts (ibid, p. 87–88.) Special emphasis should be put on the very first question which needs to apply to everyone, to be easy to comprehend and to be interesting (ibid., p. 92).

Most important were Dillman's suggestions for *surveys on the World-Wide-Web* (ibid., p. 372–401). A number of these principles were directly used for designing the present questionnaire:

- *The questionnaire should be introduced with a welcome screen that motivates the respondents and instructs them about how to proceed to the next page* (principle 11.10).<sup>1</sup> Such welcome pages – one for each of the eleven participating libraries (in the respective languages) – were created; they also served as the targets for the links on the various CIPAC web-pages (see section 4.2.4).<sup>2</sup>
- *The first question should apply to all respondents, the first page is not the place for background characteristics or demographic questions* (11.12). Consequently, the questions referring to "Characteristics of the respondents" (such as main subject area, library user status, preferred location for searching OPACs) were transferred to the end of the questionnaire.
- *The format should be conventional, i.e. similar to that normally used on paper questionnaires* (11.13). This principle implied the use of bold-printed numbers for the questions and the separation of the question stem from the answer spaces which were slightly indented and listed vertically. The beginning of each question was placed in the (upper) left-hand area of the page.
- *The use of colour should be restrained* (11.14). Following this recommendation, the originally conceived use of colours was dropped and the questionnaire was set in black letters on

<sup>1</sup> The wording of these principles (in italics) follows Dillman but was often shortened or modified by the author.

<sup>2</sup> As an example, the English version of the welcome page for the Czech National Library is reproduced as Appendix C3.




a white background; red colour was only used for question numbers, a few instructions and the final SEND-button.

- *Differences in the visual appearance resulting from different screen resolution, browsers, operation systems etc. should be avoided* (11.15) This principle lead to the use of the browser's standard font-type and -size, as well as to the consistent use of invisible HTML-tables (limited to a width of 80 percent of the browser's page) to make sure that, when viewing the questionnaire by partial-screen display, the text would properly wrap around without the need of horizontal scrolling.
- *Drop-down boxes should be used only sparingly* (11.17). Although some questions could have been designed by using such drop-down boxes, this technique was not applied at all.
- *Skip directions should be provided in a way that avoids the possibility that respondents jump to the next appropriate question without marking of answers first* (11.19). The skip directions actually used in the questionnaire were directly adapted from Dillman's sample solution (ibid., p. 395).<sup>3</sup>
- *Web questionnaires should be constructed in a way that they scroll from question to question rather than by presenting only one question (plus a NEXT-button) per page* (11.20). This approach was also used for the present questionnaire. It has the additional advantage that the right-hand browser scrollbar automatically informs the respondents about their progress (11.22).
- *Restraint should be exercised in the use of question types that are known to work poorly on paper* (11.23). Nonetheless, while questions of the "check-all-that-apply" type were not used at all, a number of open-ended questions had to be included into the present questionnaire, specifically when it seemed necessary to enquire further for reasons or comments. Even if not too much could be expected from such questions, they seemed quite appropriate in the context of an exploratory survey like the present one. Also, a final open-ended question ("Please use this space for any additional comments you may wish to make") was included, primarily to offer some space for emotional statements or other comments that respondents might wish to add.

---

<sup>3</sup> See for example Question 13 (Appendix C4).

### Appendix C3: Sample welcome page (English version)

<b>*** Questionnaire on Card-Image Library Catalogues ***</b>	
<p>Dear Library User,</p> <p>you have been linked to this questionnaire from the web-site of the <u>National Library of the Czech Republic</u>. This library offers, apart from other online catalogues and databases, several so-called "card-image catalogues" (naskenované katalogy). This term refers to online catalogues which were made by scanning the original catalogue cards and that display the digitised images of these cards in a web-browser. Therefore, these catalogues are also known as "scanned card catalogues", "card-image catalogues" or, briefly, as "image-catalogues".</p> <p>This questionnaire deals with the experiences that YOU, the user, have made with a particular card-image catalogue and with your opinions about it. The results will hopefully help those libraries offering such catalogues or considering their creation to learn about user preferences and thus to improve their services.</p>	
<p>This web-survey is being conducted as part of a masters dissertation at the School of Information Studies, University of Central England in Birmingham, UK, in February and March 2001.</p>	
<p>The questionnaire is available in Czech, English and German -- please select the version that you prefer! To begin, just click the respective START button to the right to go to the first question of the survey. Then you can simply use the scroll bar on the right side of your browser in order to proceed from one question to the next.</p>	<p>START</p> <p> Czech</p> <p> English</p> <p> German</p>
<p>Thank you for your participation!</p>	



## Appendix C4: Sample questionnaire for CIPAC users (English version)

Please complete this questionnaire only if you have **already used** one or several of the card-image catalogues of the ... Library. Thank you.

- 1.** You have just visited the web-site of the ... Library that offers several card-image catalogues. How often did you use any of these catalogues in the last semester?

- ☐ very frequently  
☐ often  
☐ every now and again  
☐ rarely  
☐ just used it for the first time

- 2.** Please recall the last time you searched one of the ... Library's card-image catalogues. What was it you were looking for?

- ☐ a book of which author and/or title were already known  
☐ the works of a specific author  
☐ a subject / a topic  
☐ other

- 3.** Please describe your last search in one of the ... Library's card-image catalogues by means of the following statements:

true    not true

- |                       |                       |  |
|-----------------------|-----------------------|--|
| <input type="radio"/> | <input type="radio"/> | carrying out that search was easy                  |
| <input type="radio"/> | <input type="radio"/> | I (also) found something originally not looked for |
| <input type="radio"/> | <input type="radio"/> | I cancelled the search as unsuccessful             |
| <input type="radio"/> | <input type="radio"/> | I knew exactly what I was looking for              |
| <input type="radio"/> | <input type="radio"/> | I had problems with browsing / with navigating     |
| <input type="radio"/> | <input type="radio"/> | I did <u>not</u> find what I was looking for       |
| <input type="radio"/> | <input type="radio"/> | I was satisfied with the results of that search    |

- ☐ ☐ there were, possibly, more relevant items in that catalogue than I managed to find

- 4.** Which card-image catalogues offered by the ... Library are important for your work?

im-    not so  
portant    important

- ☐ ☐ Catalogue 1 *[full name]*  
☐ ☐ Catalogue 2  
☐ ☐ Catalogue 3  
☐ ☐ Catalogue 4  
☐ ☐ Catalogue 5  
☐ ☐ Catalogue 6  
☐ ☐ Catalogue 7  
☐ ☐ Catalogue 8

*alternatively (when only one CIPAC offered by the library):*

- 4.** Is the card-image catalogue offered by the ... Library for your work... ?

- ☐ important  
☐ not so important

- 5.** When using [one of] the ... Library's card-image catalogue[s] for the first time, did you instantly know how to operate it?

- ☐ yes, I got immediately and intuitively into using it  
☐ no, it took me some time to get accustomed to it, mainly because of (please comment):  
 .....  
 .....

- 6.** How would you rate the following aspects of the ... Library's card-image catalogue [that you used most recently,] with regard to convenience and ease of use?

- |                       |                       |                       |  |  |
|-----------------------|-----------------------|-----------------------|--|--|
|                       | easy                  | a bit<br>difficult    | rather<br>awkward  |  |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | finding the desired al-<br>phabetical entry points                   |  |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | browsing / jumping<br>forward and backward                           |  |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | understanding the filing<br>rules (alphabetical or-<br>der of cards) |  |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | reading the images of<br>the cards (esp. when<br>handwritten)        |  |

**7. How familiar with the ... Library's card-image catalogues do you feel today (regardless of when you actually started using them)?**

- ☐ I consider myself a rather experienced user
- ☐ I consider myself a rather inexperienced user

**8. To what extent do you agree or disagree with each of the following statements describing the ... Library's card-image catalogues:**

- |  |                       |                       |                       |                       |
|--|-----------------------|-----------------------|-----------------------|-----------------------|
| strongly<br>agree                              | agree                 | neutral               | disagree              | strongly<br>disagree  |
| <input type="radio"/>                          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| The search interface is user-friendly          |                       |                       |                       |                       |
| <input type="radio"/>                          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Searching is not as efficient as it should be  |                       |                       |                       |                       |
| <input type="radio"/>                          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| The system is fast and performs well           |                       |                       |                       |                       |
| <input type="radio"/>                          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Browsing / navigating is difficult             |                       |                       |                       |                       |
| <input type="radio"/>                          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| The quality / legibility of the images is good |                       |                       |                       |                       |
| <input type="radio"/>                          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| There is adequate online help available        |                       |                       |                       |                       |

**9. The predecessors of the present card-image catalogues were "real" or "original" card catalogues. How often did you actually use the ... Library's original card catalogues?**

- ☐ I used the original card catalogues more frequently than the card-image online versions

- ☐ I use the present-day card-image catalogues more often than the former card catalogues
- ☐ I have never used the original card catalogues

Reasons for this:

.....

.....

**10. Do you believe that the present image catalogues are easier to use than the original card catalogues?**

- ☐ yes, the card-image catalogues are easier to use
- ☐ no, the former (original) card catalogues were easier to use
- ☐ don't know, there is no real difference

Reasons for your judgement:

.....

.....

**11. As you certainly know, this library also offers a "normal" online catalogue (OPAC) which contains the more recent literature. How often did you use this catalogue in the last semester, compared to the card-image catalogues?**

- ☐ I used the "normal" online catalogue more frequently than the card-image catalogues
- ☐ I used the card-image catalogues more frequently than the library's "normal" online catalogue
- ☐ I used them both at about the same frequency
- ☐ I haven't used the library's "normal" online catalogue at all

**12. In comparison with the "normal" online catalogue, the card-image catalogues do not offer the same range of options and features. Which of the following features of online catalogues do you miss when using the ... Library's card-image catalogues?**

I miss the respective option:

greatly   a bit   not at all

- |  |                       |                       |
|--|-----------------------|-----------------------|
| <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> |
| browsing of different indexes (authors, titles, subjects etc.) |                       |                       |

☐ ☐ ☐  
searching of keywords / of full texts of the catalogue records

☐ ☐ ☐  
using Boolean operators (AND, OR, NOT) for searching

☐ ☐ ☐  
displaying a list of short titles

☐ ☐ ☐  
choosing from several different display formats

☐ ☐ ☐  
building and combining sets of search results

☐ ☐ ☐  
displaying the search history

☐ ☐ ☐  
displaying the loan status (availability) of the books

☐ ☐ ☐  
making orders (from stacks), reservations, loan extensions

☐ ☐ ☐  
displaying the borrower status (e.g. books overdue, fees)

☐ ☐ ☐  
other (please specify below):  
.....

**13. Apart from the ... Library, do you know of any card-image catalogues that other libraries offer on the web?**

- ☐ no → After clicking "no", please [CLICK HERE](#) to skip to question no.17
- ☐ yes - please specify libraries or institutions:  
.....  
.....

**14. How often did you use card-image catalogues of other libraries in the last semester?**

- ☐ very frequently
- ☐ often
- ☐ every now and again
- ☐ rarely
- ☐ not at all

**15. When comparing the ... Library's card-image catalogues with the other image catalogues that you know,**

**which do you prefer with regard to the following aspects:**

I prefer the ... Library's	neutral /	I prefer
card-image catalogues	don't know	another library's card-image catalogue

☐ ☐ ☐  
user-friendly search interface

☐ ☐ ☐  
efficiency of searching / quality of results

☐ ☐ ☐  
speed of searching / system performance

☐ ☐ ☐  
ease of browsing and navigating

☐ ☐ ☐  
quality and legibility of the images

☐ ☐ ☐  
availability and quality of online help

**16. Are you aware of any features (e.g. for searching, navigating, displaying) of other card-image catalogues that the ... Library's catalogues do not offer?**

- ☐ no
- ☐ yes - what features are you referring to; how important and/or useful are they for you?  
.....  
.....

**17. Do the ... Library's card-image catalogues offer any options for subject searching (i.e. searching for topics rather than authors or titles)?**

- ☐ no
- ☐ don't know  
→ After clicking "no" or "don't know" please [CLICK HERE](#) to skip to question 20
- ☐ yes (please click one or more options below:)
- ☐ a title index
  - ☐ a subject headings catalogue
  - ☐ a classified catalogue
  - ☐ a keyword index
  - ☐ other (please specify):  
.....

- 18. How often did you use this feature / these features for subject searching in the last semester?**
- ☐ very frequently
  - ☐ often
  - ☐ every now and again
  - ☐ rarely
  - ☐ not at all
- 19. Please comment on any positive and/or negative experiences with subject searching of the ... Library's card-image catalogues:**
- positive experiences:
- .....
- .....
- negative experiences:
- .....
- .....
- 20. Do the ... Library's card-image catalogues offer any sort of interface to the library's circulation (loan) system?**
- ☐ no
  - ☐ don't know  
→ After clicking "no" or "don't know" please [CLICK HERE](#) to skip to question 23
  - ☐ yes (please click one or more options):
    - ☐ a form for ordering books from the stacks and/or making reservations
    - ☐ a display of loan information (books in/out, overdues, fees, etc.)
    - ☐ a link to the library's automated circulation system
    - ☐ other (please specify): .....
- 21. How often did you use the feature(s) for circulation (loan) in the last semester?**
- ☐ very frequently
  - ☐ often
  - ☐ every now and again
  - ☐ rarely
  - ☐ not at all
- 22. How do you rate the features for circulation (loan) of these card-image catalogues in terms of ease and convenience of use?**
- ☐ very adequate
  - ☐ somewhat adequate
  - ☐ only slightly adequate
  - ☐ not adequate at all
- any further comments:
- .....
- .....
- 23. Do you believe it is important that a card-image catalogue should have some features for circulation (loan) like those mentioned above? (in question 20)**
- ☐ yes
  - ☐ no
- any further comments:
- .....
- .....
- 24. Finally, to what extent do you agree or disagree with the following statements on the ... Library's card-image catalogues?**
- |   | strongly agree | agree | neutral | disagree | strongly disagree |
|---|----------------|-------|---------|----------|-------------------|
| <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> |                |       |         |          |                   |
| This system is convenient to use  |                |       |         |          |                   |
| <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> |                |       |         |          |                   |
| This system is rather old-fashioned   |                |       |         |          |                   |
| <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> |                |       |         |          |                   |
| I am totally happy with this system   |                |       |         |          |                   |
| <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> |                |       |         |          |                   |
| This system suits the library well  |                |       |         |          |                   |
| <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> |                |       |         |          |                   |
| This system should be replaced by something else  |                |       |         |          |                   |
- 25. Generally speaking, in what capacity do you mostly use library catalogues? (please click only one)**
- ☐ as a student
  - ☐ as an academic teacher / researcher
  - ☐ as a librarian
  - ☐ other

**26. What is your main subject area?**  
(only one, please)

- ☐ humanities, arts
- ☐ social / behavioural sciences
- ☐ law, economics, business administration
- ☐ science, mathematics
- ☐ engineering, technology, computer science
- ☐ medicine

- ☐ mainly on a workstation in the office / at home / other location
- ☐ both (equally) in the library and in my office / my home / other location

**Please use this space for any additional comments you may wish to make:**

.....

.....

.....

**27. Where do you normally search web-based library catalogues?**

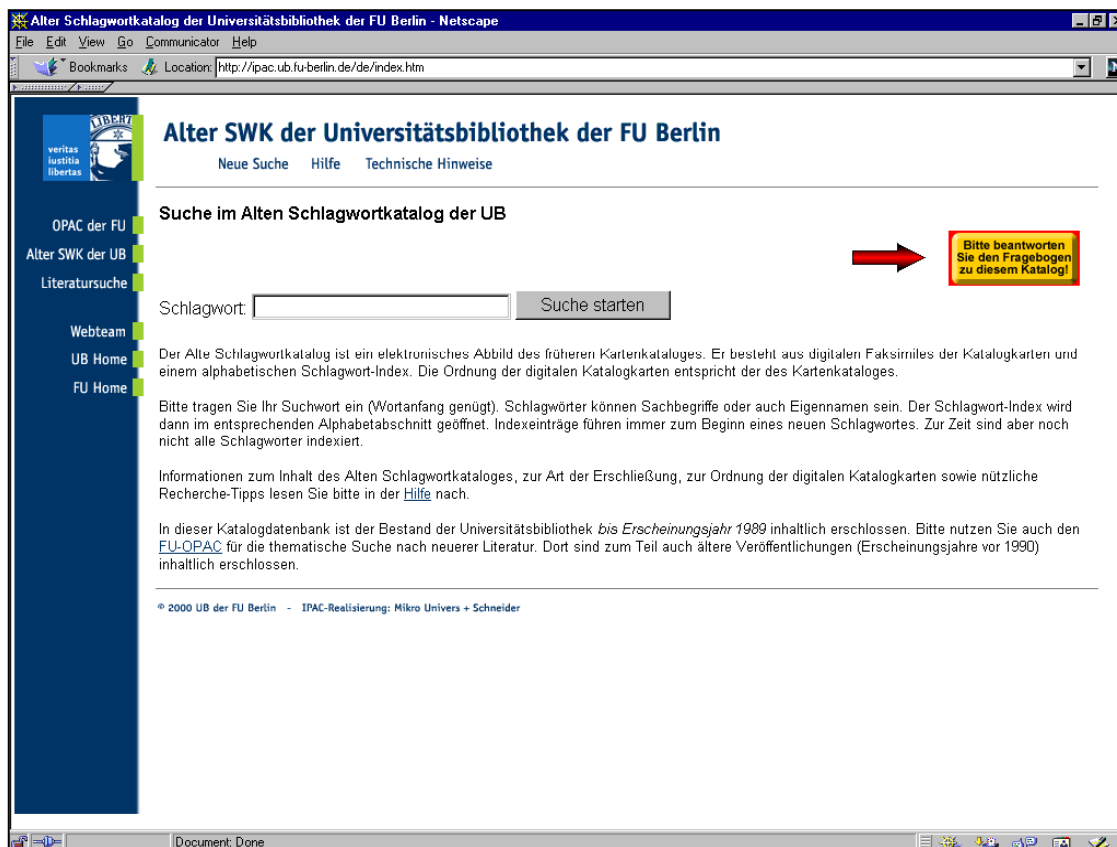
- ☐ mainly on a user workstation in the library

**Thank you very much indeed for answering the above questions!**  
**Please post the questionnaire by clicking the "Send" button NOW.**

**Send Questionnaire**

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Last update: 10 February 2001

## Appendix C5: Sample CIPAC web-page with link to questionnaire (FUB)



## Appendix C6: Summary of field work

Library	Start Date	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10	Wk 11	End Date
		f	foum	foum	foum	foum	foum	foum	foum	foum	foum	foum	
University of Innsbruck Faculty of Theol. Library	5.2.2001	3	5	5	6	7	7	8	9	9	9	9	19.4.2001
Austrian National Library	5.2.2001	16	29	35	43	51	56	62	69	77	79	79	17.4.2001
University of Vienna Library	5.2.2001	11	21	30	36	48	52	56	59	65	72	73	17.4.2001
Vienna University of Econ. & Business Adm. Lib.	5.2.2001	1	1	2	2	2	2	2	2	2	2	2	17.4.2001
Berne City and University Library	13.2.2001	n/a	4	5	9	11	13	15	17	22	25	25	19.4.2001
Moravian Library	4.2.2001	3	4	7	9	10	12	14	15	21	22	22	18.4.2001
National Library of the Czech Republic	13.2.2001	n/a	3	5	16	21	27	34	34	42	47	48	17.4.2001
Berlin Central and Regional Library	7.2.2001	0	0	2	2	2	2	2	2	3	3	3	19.4.2001
University Library, Freie Universität Berlin	5.2.2001	5	6	7	7	9	9	10	11	15	15	15	18.4.2001
Saxony-Anhalt University and State Library	12.2.2001	n/a	2	3	7	10	10	13	14	15	16	16	19.4.2001
Heidelberg University Library	5.2.2001	2	10	12	17	20	21	21	24	25	27	28	18.4.2001
<b>All libraries</b>		<b>41</b>	<b>85</b>	<b>113</b>	<b>154</b>	<b>191</b>	<b>211</b>	<b>237</b>	<b>256</b>	<b>296</b>	<b>317</b>	<b>320</b>	

## Appendix C7: CIPAC user survey: Tables

<b>Table C-1</b> <b>Respondents per CIPAC type</b>		<b>Type "A"</b>	<b>Type "B"</b>	<b>Type "C"</b>	<b>Total Percent</b>	<b>No. of cases</b>
<b>Total</b>	<b>All respondents</b>	50.9%	27.2%	21.9%	100.0%	320
<b>Type of CIPAC</b>	Type "A"	100.0%	0.0%	0.0%	100.0%	163
	Type "B"	0.0%	100.0%	0.0%	100.0%	87
	Type "C"	0.0%	0.0%	100.0%	100.0%	70
<b>Index of CIPAC expertise</b>	High	68.0%	17.5%	14.4%	100.0%	97
	Medium	46.5%	35.2%	18.2%	100.0%	159
	Low	35.9%	21.9%	42.2%	100.0%	64
<b>Main subject area</b>	Humanities, arts	55.1%	29.0%	15.9%	100.0%	214
	Social sci., econ., law	46.8%	29.8%	23.4%	100.0%	47
	Sci. & technol., med.	44.1%	17.6%	38.2%	100.0%	34
<b>Library user status</b>	Student	59.5%	26.1%	14.4%	100.0%	111
	Academic	57.0%	26.0%	17.0%	100.0%	100
	Librarian	28.6%	36.7%	34.7%	100.0%	49
<b>OPAC searching location</b>	Library	45.3%	35.8%	18.9%	100.0%	53
	Home, office, etc	56.3%	23.0%	20.7%	100.0%	174

<b>Table C-2</b> <b>Index of CIPAC expertise</b>		<b>high</b>	<b>medium</b>	<b>low</b>	<b>Total Percent</b>	<b>No. of cases</b>
<b>Total</b>	<b>All respondents</b>	30.3%	49.7%	20.0%	100.0%	320
<b>Type of CIPAC</b>	Type "A"	40.5%	45.4%	14.1%	100.0%	163
	Type "B"	19.5%	64.4%	16.1%	100.0%	87
	Type "C"	20.0%	41.4%	38.6%	100.0%	70
<b>Index of CIPAC expertise</b>	High	100.0%	0.0%	0.0%	100.0%	97
	Medium	0.0%	100.0%	0.0%	100.0%	159
	Low	0.0%	0.0%	100.0%	100.0%	64
<b>Main subject area</b>	Humanities, arts	36.9%	50.5%	12.6%	100.0%	214
	Social sci., econ., law	19.1%	48.9%	31.9%	100.0%	47
	Sci. & technol., med.	17.6%	52.9%	29.4%	100.0%	34
<b>Library user status</b>	Student	32.4%	49.5%	18.0%	100.0%	111
	Academic	38.0%	51.0%	11.0%	100.0%	100
	Librarian	24.5%	61.2%	14.3%	100.0%	49
<b>OPAC searching location</b>	Library	30.2%	50.9%	18.9%	100.0%	53
	Home, office, etc	34.5%	48.9%	16.7%	100.0%	174

<b>Table C-3</b> <b>Frequency of CIPAC use (Q1)</b>		<b>very frequently</b>	<b>often</b>	<b>every now and again</b>	<b>rarely</b>	<b>first time just now</b>	<b>Total Percent</b>	<b>No. of cases</b>
<b>Total</b>	<b>All respondents</b>	32.2%	30.9%	22.5%	4.1%	10.3%	100.0%	320
<b>Type of CIPAC</b>	Type "A"	42.3%	31.3%	16.6%	3.7%	6.1%	100.0%	163
	Type "B"	20.7%	36.8%	26.4%	3.4%	12.6%	100.0%	87
	Type "C"	22.9%	22.9%	31.4%	5.7%	17.1%	100.0%	70
<b>Index of CIPAC expertise</b>	High	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	97
	Medium	3.8%	57.9%	30.8%	2.5%	5.0%	100.0%	159
	Low	0.0%	10.9%	35.9%	14.1%	39.1%	100.0%	64
<b>Main subject area</b>	Humanities, arts	38.8%	32.7%	20.1%	3.7%	4.7%	100.0%	214
	Social sci., econ., law	21.3%	29.8%	29.8%	4.3%	14.9%	100.0%	47
	Sci. & technol., med.	17.6%	32.4%	23.5%	8.8%	17.6%	100.0%	34
<b>Library user status</b>	Student	35.1%	30.6%	21.6%	5.4%	7.2%	100.0%	111
	Academic	38.0%	39.0%	21.0%	0.0%	2.0%	100.0%	100
	Librarian	26.5%	28.6%	24.5%	8.2%	12.2%	100.0%	49
<b>OPAC searching location</b>	Library	30.2%	35.8%	24.5%	5.7%	3.8%	100.0%	53
	Home, office, etc	36.8%	29.9%	21.3%	4.0%	8.0%	100.0%	174

<b>Table C-4</b> <b>Type of last CIPAC search (Q2)</b>		<b>author and/or title known</b>	<b>works of a specific author</b>	<b>topic / subject</b>	<b>other</b>	<b>no answer</b>	<b>Total Percent<sup>1</sup></b>	<b>No. of cases</b>
<b>Total</b>	<b>All respondents</b>	60.9%	37.8%	29,10%	2.2%	1.6%	131.6%	320
<b>Type of CIPAC</b>	Type "A"	65.6%	38.7%	33,70%	0.6%	0.0%	138.7%	163
	Type "B"	62.1%	27.6%	25,30%	1.1%	4.6%	120.7%	87
	Type "C"	48.6%	48.6%	22,90%	7.1%	1.4%	128.6%	70
<b>Index of CIPAC expertise</b>	High	72.2%	44.3%	28,90%	1.0%	0.0%	146.4%	97
	Medium	62.3%	37.1%	28,90%	1.3%	0.0%	129.6%	159
	Low	40.6%	29.7%	29,70%	6.3%	7.8%	114.1%	64
<b>Main subject area</b>	Humanities, arts	65.0%	39.7%	27,10%	1.9%	0.9%	134.6%	214
	Social sci., econ., law	61.7%	25.5%	29,80%	0.0%	0.0%	117.0%	47
	Sci. & technol., med.	52.9%	44.1%	35,30%	2.9%	2.9%	138.2%	34
<b>Library user status</b>	Student	61.3%	32.4%	39,60%	0.9%	0.0%	134.2%	111
	Academic	72.0%	42.0%	23,00%	2.0%	0.0%	139.0%	100
	Librarian	63.3%	36.7%	14,30%	2.0%	2.0%	118.4%	49
<b>OPAC searching location</b>	Library	58.5%	47.2%	17,00%	0.0%	0.0%	122.6%	53
	Home, office, etc	66.1%	37.4%	26,40%	1.7%	1.7%	133.3%	174

<b>Table C-5</b> <b>Characteristics of last CIPAC search (Q3)</b>		<b>carrying out that search was easy</b>	<b>found something orig. not looked for</b>	<b>cancelled search as unsuccessful</b>	<b>knew exactly what I was looking for</b>	<b>problems with browsing / navigating</b>	<b>did not find what I was looking for</b>	<b>was satisfied with results</b>	<b>more relevant items in cat. than found</b>	<b>none</b>	<b>Total Percent</b>	<b>No. of cases</b>
<b>Total</b>	<b>All respondents</b>	68.8%	43.8%	13.4%	75.6%	23.1%	22.5%	60.9%	32.5%	3.8%	344.4%	320
<b>Type of CIPAC</b>	Type "A"	68.7%	47.2%	11.7%	82.2%	26.4%	22.7%	65.0%	36.8%	2.5%	363.2%	163
	Type "B"	83.9%	34.5%	14.9%	73.6%	13.8%	21.8%	65.5%	20.7%	3.4%	332.2%	87
	Type "C"	50.0%	47.1%	15.7%	62.9%	27.1%	22.9%	45.7%	37.1%	7.1%	315.7%	70
<b>Index of CIPAC expertise</b>	High	75.3%	49.5%	8.2%	87.6%	19.6%	19.6%	66.0%	24.7%	2.1%	352.6%	97
	Medium	76.1%	45.3%	11.9%	77.4%	20.1%	22.6%	67.9%	31.4%	1.9%	354.7%	159
	Low	40.6%	31.3%	25.0%	53.1%	35.9%	26.6%	35.9%	46.9%	10.9%	306.3%	64
<b>Main subject area</b>	Humanities, arts	72.0%	44.4%	13.1%	81.8%	23.4%	21.5%	64.0%	32.7%	2.3%	355.1%	214
	Social sci., econ., law	66.0%	46.8%	12.8%	74.5%	25.5%	23.4%	63.8%	40.4%	6.4%	359.6%	47
	Sci. & technol., med.	70.6%	47.1%	14.7%	64.7%	17.6%	23.5%	52.9%	32.4%	0.0%	323.5%	34
<b>Library user status</b>	Student	65.8%	51.4%	18.0%	81.1%	28.8%	27.9%	56.8%	49.5%	0.9%	380.2%	111
	Academic	74.0%	49.0%	11.0%	82.0%	24.0%	17.0%	68.0%	19.0%	3.0%	347.0%	100
	Librarian	79.6%	26.5%	8.2%	77.6%	6.1%	18.4%	71.4%	20.4%	2.0%	310.2%	49
<b>OPAC searching location</b>	Library	71.7%	32.1%	11.3%	81.1%	20.8%	18.9%	50.9%	28.3%	5.7%	320.8%	53
	Home, office, etc	70.1%	45.4%	12.6%	82.2%	19.5%	23.0%	68.4%	33.9%	2.3%	357.5%	174

<b>Table C-6</b> <b>Perceived importance of CIPACs (Q4): Austrian National Library (ONB)</b>		<b>Frequency</b>	<b>Percent</b>
Author/title Catalogue, 1930-1991		71	89.9%
Subject Headings Catalogue, 1930-1991		65	82.3%
Old Autographs Catalogue, Manuscript Dept.		17	21.5%
Places of Printing Catalogue, 1501-1800		5	6.3%
Literary Forms Catalogue, 1501-1929		6	7.6%
none of the above		3	3.8%
<b>Total = All ONB respondents</b>		<b>79</b>	<b>100.0%</b>

<b>Table C-7</b> <b>Perceived importance of CIPACs (Q4): University of Vienna Library (UBW)</b>		<b>Frequency</b>	<b>Percent</b>
Author/title Catalogue, up to 1931		45	61.6%
Author/title Catalogue, 1932-1988		62	84.9%
Decentral Holdings Catalogue, 1972-1991		31	42.5%
Subject Headings Catalogue, 1500-1931		38	52.1%
Subject Headings Catalogue, 1932-1971		38	52.1%
Subject Headings Catalogue, 1972-1989		41	56.2%
none of the above		2	2.7%
<b>Total = All UBW respondents</b>		<b>73</b>	<b>100.0%</b>

<sup>1</sup> In the case of those questions where respondents could select more than one answer category, the total percentage is in excess of 100 percent.



<b>Table C-8</b> <b>Perceived importance of CIPACs (Q4):</b> <b>National Library of the Czech Republic (NKP)</b>		
	<b>Frequency</b>	<b>Percent</b>
General Catalogue I	32	66.7%
General Catalogue II	29	60.4%
General Catalogue III	22	45.8%
Slavonic Library Catalogue	11	22.9%
19th Century Bibliography	8	16.7%
Music Division Catalogue	3	6.3%
Library Science Library Catalogue	3	6.3%
Former Russian Foreign Hist. Archive Cat.	6	12.5%
none of the above	3	6.3%
<b>Total = All NKP respondents</b>	<b>48</b>	<b>100.0%</b>

<b>Table C-9</b> <b>Perceived importance of CIPACs (Q4):</b> <b>Heidelberg University Library (UBH)</b>		
	<b>Frequency</b>	<b>Percent</b>
Author/title Catalogue, 1936-1985	23	82.1%
<b>Total = All UBH respondents</b>	<b>28</b>	<b>100.0%</b>

<b>Table C-10</b> <b>Perceived importance of CIPACs (Q4):</b> <b>Berne University Library (SUB)</b>		
	<b>Frequency</b>	<b>Percent</b>
Old Author/title Catalogue, up to 1989	24	96.0%
<b>Total = All SUB respondents</b>	<b>25</b>	<b>100.0%</b>

<b>Table C-11</b> <b>Perceived importance of CIPACs (Q4):</b> <b>Moravian Library (MZK)</b>		
	<b>Frequency</b>	<b>Percent</b>
Univ. Lib. - Author Catalogue Z1, up to 1950	16	72.7%
Univ. Lib. - Author Catalogue Z2, 1951-1994	19	86.4%
Pedagog. Lib. - Author Cat. Z1, up to 1985	8	36.4%
Pedagog. Lib. - Author Cat. Z2, 1986-1994	7	31.8%
Tech. Library - Author Cat. Z3, 1978-1994	9	40.9%
none of the above	1	4.5%
<b>Total = All MZK respondents</b>	<b>22</b>	<b>100.0%</b>

<b>Table C-12</b> <b>Perceived importance of CIPACs (Q4):</b> <b>Saxony-Anhalt State &amp; Univ. Library (ULB)</b>		
	<b>Frequency</b>	<b>Percent</b>
Author/title Catalogue, up to 1929	10	62.5%
Author/title Catalogue, 1930-1974	13	81.3%
Author/title Catalogue, 1975-1990	15	93.8%
Subject Headings Catalogue, 1945-1990	3	18.8%
Dissertations/theses Catalogue, 1800-1974	3	18.8%
Dissertations/theses Catalogue, 1975-1990	3	18.8%
Saxony-Anhalt Union Catalogue, up to 1974	2	12.5%
Saxony-Anhalt Union Catalogue, 1975-1990	3	18.8%
none of the above	1	6.3%
<b>Total = All ULB respondents</b>	<b>16</b>	<b>100.0%</b>

<b>Table C-13</b> <b>Perceived importance of CIPACs (Q4):</b> <b>FU Berlin University Library (FUB)</b>		
	<b>Frequency</b>	<b>Percent</b>
Subject Headings Catalogue, up to 1989	12	80.0%
<b>Total = All FUB respondents</b>	<b>15</b>	<b>100.0%</b>

<b>Table C-14</b> <b>Instantly familiar with operating CIPACs? (Q5)</b>		<b>yes, immediately</b>	<b>no, it took some time</b>	<b>no answer</b>	<b>Total Percent</b>	<b>No. of cases</b>
<b>Total</b>	<b>All respondents</b>	67.8%	30.3%	1.9%	100.0%	320
<b>Type of CIPAC</b>	Type "A"	66.3%	33.1%	0.6%	100.0%	163
	Type "B"	72.4%	25.3%	2.3%	100.0%	87
	Type "C"	65.7%	30.0%	4.3%	100.0%	70
<b>Index of CIPAC expertise</b>	High	78.4%	20.6%	1.0%	100.0%	97
	Medium	70.4%	27.7%	1.9%	100.0%	159
	Low	45.3%	51.6%	3.1%	100.0%	64
<b>Main subject area</b>	Humanities, arts	70.6%	29.4%	0.0%	100.0%	214
	Social sci., econ., law	68.1%	31.9%	0.0%	100.0%	47
	Sci. & technol., med.	64.7%	35.3%	0.0%	100.0%	34
<b>Library user status</b>	Student	67.6%	32.4%	0.0%	100.0%	111
	Academic	66.0%	34.0%	0.0%	100.0%	100
	Librarian	85.7%	14.3%	0.0%	100.0%	49
<b>OPAC searching location</b>	Library	66.0%	34.0%	0.0%	100.0%	53
	Home, office, etc	71.3%	28.7%	0.0%	100.0%	174

<b>Table C-15</b> Convenience & ease of CIPAC most recently used (Q6)		<b>Finding desired alphabetical entry points</b>					
		easy	a bit difficult	rather awkward	no answer	Total Percent	No. of cases
<b>Total</b>	<b>All respondents</b>	70.0%	20.6%	5.9%	3.4%	100.0%	320
<b>Type of CIPAC</b>	Type "A"	76.1%	15.3%	7.4%	1.2%	100.0%	163
	Type "B"	75.9%	16.1%	5.7%	2.3%	100.0%	87
	Type "C"	48.6%	38.6%	2.9%	10.0%	100.0%	70
<b>Index of CIPAC expertise</b>	High	76.3%	17.5%	5.2%	1.0%	100.0%	97
	Medium	71.1%	22.0%	3.8%	3.1%	100.0%	159
	Low	57.8%	21.9%	12.5%	7.8%	100.0%	64
<b>Main subject area</b>	Humanities, arts	74.3%	19.2%	6.1%	0.5%	100.0%	214
	Social sci., econ., law	66.0%	25.5%	6.4%	2.1%	100.0%	47
	Sci. & technol., med.	67.6%	23.5%	2.9%	5.9%	100.0%	34
<b>Library user status</b>	Student	77.5%	18.9%	3.6%	0.0%	100.0%	111
	Academic	70.0%	23.0%	6.0%	1.0%	100.0%	100
	Librarian	77.6%	16.3%	2.0%	4.1%	100.0%	49
<b>OPAC searching location</b>	Library	73.6%	20.8%	5.7%	0.0%	100.0%	53
	Home, office, etc	70.7%	21.3%	5.7%	2.3%	100.0%	174

<b>Table C-16</b> Convenience & ease of CIPAC most recently used (Q6 contd)		<b>Browsing / jumping forward &amp; backward</b>					
		easy	a bit difficult	rather awkward	no answer	Total Percent	No. of cases
<b>Total</b>	<b>All respondents</b>	52.8%	33.1%	8.4%	5.6%	100.0%	320
<b>Type of CIPAC</b>	Type "A"	50.3%	35.0%	12.3%	2.5%	100.0%	163
	Type "B"	67.8%	24.1%	4.6%	3.4%	100.0%	87
	Type "C"	40.0%	40.0%	4.3%	15.7%	100.0%	70
<b>Index of CIPAC expertise</b>	High	52.6%	36.1%	8.2%	3.1%	100.0%	97
	Medium	59.1%	28.9%	8.8%	3.1%	100.0%	159
	Low	37.5%	39.1%	7.8%	15.6%	100.0%	64
<b>Main subject area</b>	Humanities, arts	55.6%	33.6%	9.3%	1.4%	100.0%	214
	Social sci., econ., law	57.4%	36.2%	0.0%	6.4%	100.0%	47
	Sci. & technol., med.	50.0%	29.4%	14.7%	5.9%	100.0%	34
<b>Library user status</b>	Student	55.0%	37.8%	7.2%	0.0%	100.0%	111
	Academic	54.0%	31.0%	12.0%	3.0%	100.0%	100
	Librarian	57.1%	34.7%	2.0%	6.1%	100.0%	49
<b>OPAC searching location</b>	Library	50.9%	39.6%	7.5%	1.9%	100.0%	53
	Home, office, etc	55.2%	34.5%	7.5%	2.9%	100.0%	174

<b>Table C-17</b> Convenience & ease of CIPAC most recently used (Q6 contd)		<b>Understanding the filing rules</b>					
		easy	a bit difficult	rather awkward	no answer	Total Percent	No. of cases
<b>Total</b>	<b>All respondents</b>	51.9%	29.7%	12.5%	5.9%	100.0%	320
<b>Type of CIPAC</b>	Type "A"	51.5%	28.2%	16.6%	3.7%	100.0%	163
	Type "B"	50.6%	36.8%	9.2%	3.4%	100.0%	87
	Type "C"	54.3%	24.3%	7.1%	14.3%	100.0%	70
<b>Index of CIPAC expertise</b>	High	55.7%	26.8%	13.4%	4.1%	100.0%	97
	Medium	54.1%	32.7%	10.1%	3.1%	100.0%	159
	Low	40.6%	26.6%	17.2%	15.6%	100.0%	64
<b>Main subject area</b>	Humanities, arts	54.2%	31.3%	12.1%	2.3%	100.0%	214
	Social sci., econ., law	42.6%	29.8%	21.3%	6.4%	100.0%	47
	Sci. & technol., med.	58.8%	32.4%	2.9%	5.9%	100.0%	34
<b>Library user status</b>	Student	55.9%	35.1%	9.0%	0.0%	100.0%	111
	Academic	57.0%	22.0%	16.0%	5.0%	100.0%	100
	Librarian	55.1%	30.6%	8.2%	6.1%	100.0%	49
<b>OPAC searching location</b>	Library	47.2%	32.1%	15.1%	5.7%	100.0%	53
	Home, office, etc	56.3%	27.0%	13.8%	2.9%	100.0%	174

<b>Table C-18</b> Convenience & ease of CIPAC most recently used (Q6 contd)		<b>Reading the images (esp. handwr.)</b>					
		easy	a bit difficult	rather awkward	no answer	Total Percent	No. of cases
<b>Total</b>	<b>All respondents</b>	34.4%	44.7%	13.8%	7.2%	100.0%	320
<b>Type of CIPAC</b>	Type "A"	25.2%	50.3%	20.9%	3.7%	100.0%	163
	Type "B"	58.6%	32.2%	4.6%	4.6%	100.0%	87
	Type "C"	25.7%	47.1%	8.6%	18.6%	100.0%	70
<b>Index of CIPAC expertise</b>	High	26.8%	49.5%	19.6%	4.1%	100.0%	97
	Medium	35.8%	46.5%	11.3%	6.3%	100.0%	159
	Low	42.2%	32.8%	10.9%	14.1%	100.0%	64
<b>Main subject area</b>	Humanities, arts	36.4%	47.2%	13.6%	2.8%	100.0%	214
	Social sci., econ., law	29.8%	46.8%	14.9%	8.5%	100.0%	47
	Sci. & technol., med.	44.1%	35.3%	11.8%	8.8%	100.0%	34
<b>Library user status</b>	Student	30.6%	55.0%	14.4%	0.0%	100.0%	111
	Academic	40.0%	39.0%	15.0%	6.0%	100.0%	100
	Librarian	32.7%	46.9%	12.2%	8.2%	100.0%	49
<b>OPAC searching location</b>	Library	34.0%	49.1%	15.1%	1.9%	100.0%	53
	Home, office, etc	36.8%	44.8%	13.2%	5.2%	100.0%	174

<b>Table C-19</b> Self-rated familiarity with CIPACs (Q7)		rather experienced	rather inexperienced	no answer	Total Percent	No. of cases
<b>Total</b>	<b>All respondents</b>	78.1%	18.1%	3.8%	100.0%	320
<b>Type of CIPAC</b>	Type "A"	84.0%	12.3%	3.7%	100.0%	163
	Type "B"	82.8%	16.1%	1.1%	100.0%	87
	Type "C"	58.6%	34.3%	7.1%	100.0%	70
<b>Index of CIPAC expertise</b>	High	100.0%	0.0%	0.0%	100.0%	97
	Medium	96.2%	2.5%	1.3%	100.0%	159
	Low	0.0%	84.4%	15.6%	100.0%	64
<b>Main subject area</b>	Humanities, arts	85.5%	13.1%	1.4%	100.0%	214
	Social sci., econ., law	66.0%	34.0%	0.0%	100.0%	47
	Sci. & technol., med.	70.6%	26.5%	2.9%	100.0%	34
<b>Library user status</b>	Student	79.3%	20.7%	0.0%	100.0%	111
	Academic	89.0%	9.0%	2.0%	100.0%	100
	Librarian	83.7%	14.3%	2.0%	100.0%	49
<b>OPAC searching location</b>	Library	81.1%	18.9%	0.0%	100.0%	53
	Home, office, etc	81.0%	18.4%	0.6%	100.0%	174

<b>Table C-20</b> Characteristics of "this library's" CIPAC(s) (Q8)		user-friendly search interface		searching is not efficient enough		fast system, performing well		browsing / navigating is difficult		good quality & legibility of images		adequate online help available	
1=strongly agree, 5=strongly disagree		Mean	Std dev	Mean	Std dev	Mean	Std dev	Mean	Std dev	Mean	Std dev	Mean	Std dev
<b>Total</b>	<b>All respondents</b>	2.42	1.10	2.89	1.23	2.64	1.17	3.27	1.25	2.60	1.14	2.85	0.91
<b>Type of CIPAC</b>	Type "A"	2.55	1.20	2.88	1.32	2.69	1.20	3.18	1.27	2.86	1.23	2.84	0.91
	Type "B"	2.17	0.98	3.11	1.19	2.40	1.08	3.49	1.31	2.18	0.95	2.92	0.95
	Type "C"	2.44	0.93	2.61	0.98	2.86	1.17	3.17	1.06	2.53	0.95	2.80	0.83
<b>Index of CIPAC expertise</b>	High	2.39	1.18	2.96	1.32	2.79	1.25	3.40	1.22	2.86	1.21	2.76	0.91
	Medium	2.34	1.02	2.99	1.22	2.55	1.15	3.33	1.22	2.55	1.07	2.86	0.87
	Low	2.70	1.15	2.47	1.03	2.65	1.05	2.83	1.32	2.26	1.12	3.00	0.99
<b>Main subject area</b>	Humanities, arts	2.46	1.08	2.87	1.23	2.81	1.19	3.22	1.25	2.65	1.14	2.87	0.90
	Social sci., econ., law	2.57	1.11	2.70	1.20	2.26	0.99	3.38	1.17	2.53	1.16	2.91	0.82
	Sci. & technol., med.	2.06	1.13	3.09	1.25	2.42	1.15	3.18	1.29	2.45	1.15	2.64	1.03
<b>Library user status</b>	Student	2.55	1.11	2.72	1.12	2.75	1.10	3.20	1.23	2.70	1.14	2.83	0.94
	Academic	2.43	1.10	3.01	1.30	2.67	1.26	3.31	1.25	2.65	1.16	2.95	0.89
	Librarian	2.31	1.06	3.04	1.22	2.40	1.21	3.56	1.09	2.50	1.05	2.70	0.82
<b>OPAC searching location</b>	Library	2.43	1.06	2.65	1.12	2.73	1.08	3.21	1.26	2.64	1.10	2.98	0.88
	Home, office, etc	2.40	1.10	2.94	1.19	2.55	1.19	3.31	1.22	2.57	1.17	2.81	0.89

<b>Table C-21</b> <b>Use of former card catalogues (Q9)</b>		<b>Card catalogues more frequ.</b>	<b>CIPACs more frequently</b>	<b>never used orig. card catalogues</b>	<b>both at the same frequency</b>	<b>no answer</b>	<b>Total Percent</b>	<b>No. of cases</b>
<b>Total</b>	<b>All respondents</b>	22.8%	49.7%	15.9%	4.7%	6.9%	100.0%	320
<b>Type of CIPAC</b>	Type "A"	18.4%	55.2%	17.2%	5.5%	3.7%	100.0%	163
	Type "B"	20.7%	49.4%	19.5%	6.9%	3.4%	100.0%	87
	Type "C"	35.7%	37.1%	8.6%	0.0%	18.6%	100.0%	70
<b>Index of CIPAC expertise</b>	High	15.5%	64.9%	5.2%	9.3%	5.2%	100.0%	97
	Medium	25.2%	51.6%	17.0%	3.1%	3.1%	100.0%	159
	Low	28.1%	21.9%	29.7%	1.6%	18.8%	100.0%	64
<b>Main subject area</b>	Humanities, arts	22.0%	58.4%	10.7%	5.6%	3.3%	100.0%	214
	Social sci., econ., law	25.5%	40.4%	29.8%	2.1%	2.1%	100.0%	47
	Sci. & technol., med.	32.4%	29.4%	32.4%	0.0%	5.9%	100.0%	34
<b>Library user status</b>	Student	18.9%	55.9%	21.6%	1.8%	1.8%	100.0%	111
	Academic	27.0%	54.0%	4.0%	11.0%	4.0%	100.0%	100
	Librarian	28.6%	36.7%	30.6%	2.0%	2.0%	100.0%	49
<b>OPAC searching location</b>	Library	30.2%	37.7%	22.6%	3.8%	5.7%	100.0%	53
	Home, office, etc	21.8%	55.7%	16.1%	4.0%	2.3%	100.0%	174

<b>Table C-22</b> <b>Reasons for using CIPACs more frequently (Q9 contd)</b>	<b>Frequency</b>	<b>Percent</b>
easy & universal access via www	74	46.5%
= independent of place	49	30.8%
= independent of time	8	5.0%
= easier, more convenient	20	12.6%
= time-saving	7	4.4%
better overview, more clarity	1	0.6%
faster & easier searching	13	8.2%
I need more literature now	5	3.1%
online ordering of books	1	0.6%
printing out / copying card images	3	1.9%
other	2	1.3%
no answer	66	41.5%
<b>Total</b>	<b>159</b>	<b>100.0%</b>

<b>Table C-23</b> <b>Reasons for using card catalogues more frequently (Q9 contd)</b>	<b>Frequency</b>	<b>Percent</b>
faster browsing / searching	11	15.1%
better overview, more clarity	5	6.8%
easier to handle / navigate	7	9.6%
less strenuous for my eyes	2	2.7%
I needed more literature then	1	1.4%
other	4	5.5%
no answer	50	68.5%
<b>Total</b>	<b>73</b>	<b>100.0%</b>

<b>Table C-24</b> <b>Reasons for never having used the card catalogue (Q9 contd)</b>	<b>Frequency</b>	<b>Percent</b>
haven't been there / live elsewhere	20	39.2%
was no student / didn't need literature then	12	23.5%
too arduous / too cumbersome	4	7.8%
other	1	2.0%
no answer	14	27.5%
<b>Total</b>	<b>51</b>	<b>100.0%</b>

<b>Table C-25</b> <b>Perceived ease of catalogue use (Q10)</b>		<b>CIPACs easier to use</b>	<b>Card catalogues easier to use</b>	<b>No real difference / don't know</b>	<b>Total Percent</b>	<b>No. of cases</b>
<b>Total</b>	<b>Filtered<sup>2</sup></b>	41.7%	29.1%	29.1%	100.0%	247
<b>Type of CIPAC</b>	Type "A"	37.2%	32.6%	30.2%	100.0%	129
	Type "B"	46.3%	20.9%	32.8%	100.0%	67
	Type "C"	47.1%	31.4%	21.6%	100.0%	51
<b>Index of CIPAC expertise</b>	High	39.1%	26.4%	34.5%	100.0%	87
	Medium	44.1%	29.1%	26.8%	100.0%	127
	Low	39.4%	36.4%	24.2%	100.0%	33
<b>Main subject area</b>	Humanities, arts	42.4%	28.3%	29.3%	100.0%	184
	Social sci., econ., law	34.4%	34.4%	31.3%	100.0%	32
	Sci. & technol., med.	52.4%	33.3%	14.3%	100.0%	21
<b>Library user status</b>	Student	47.1%	24.7%	28.2%	100.0%	85
	Academic	39.1%	31.5%	29.3%	100.0%	92
	Librarian	30.3%	39.4%	30.3%	100.0%	33
<b>OPAC searching location</b>	Library	31.6%	42.1%	26.3%	100.0%	38
	Home, office, etc	45.1%	25.4%	29.6%	100.0%	142

<b>Table C-26</b> <b>Reasons why CIPACs are easier to use (Q10 contd)</b>		<b>Frequency</b>	<b>Percent</b>
computers easier to operate, more convenient		6	5.8%
ergonomically more comfortable		18	17.5%
printing out of indiv. cards		5	4.9%
online ordering of books		4	3.9%
faster searching / browsing / navigating		1	1.0%
various advantages of access via www		20	19.4%
other		3	2.9%
no answer		66	64.1%
<b>Total</b>		103	100.0%

<b>Table C-27</b> <b>Reasons why card catalogues are easier to use (Q10 contd)</b>		<b>Frequency</b>	<b>Percent</b>
browsing of cards is faster		14	19.4%
browsing of cards is easier, less arduous		10	13.9%
better overview, more clarity		4	5.6%
more flexible, easier to jump back & forth		7	9.7%
better legible, no badly scanned cards		6	8.3%
less strenuous for my eyes		2	2.8%
system / modem / internet too slow		3	4.2%
other		4	5.6%
no answer		35	48.6%
<b>Total</b>		72	100.0%

<b>Table C-28</b> <b>Use of "normal" OPAC (Q11)</b>		<b>more frequently than CIPACs</b>	<b>less frequently than CIPACs</b>	<b>both about the same</b>	<b>haven't used OPAC at all</b>	<b>no answer</b>	<b>Total Percent</b>	<b>No. of cases</b>
<b>Total</b>	<b>All respondents</b>	47.5%	6.3%	31.6%	7.2%	7.5%	100.0%	320
<b>Type of CIPAC</b>	Type "A"	39.3%	7.4%	44.8%	4.9%	3.7%	100.0%	163
	Type "B"	73.6%	2.3%	10.3%	8.0%	5.7%	100.0%	87
	Type "C"	34.3%	8.6%	27.1%	11.4%	18.6%	100.0%	70
<b>Index of CIPAC expertise</b>	High	35.1%	10.3%	48.5%	5.2%	1.0%	100.0%	97
	Medium	56.6%	5.0%	28.9%	5.0%	4.4%	100.0%	159
	Low	43.8%	3.1%	12.5%	15.6%	25.0%	100.0%	64
<b>Main subject area</b>	Humanities, arts	47.7%	7.9%	35.0%	7.0%	2.3%	100.0%	214
	Social sci., econ., law	68.1%	2.1%	21.3%	6.4%	2.1%	100.0%	47
	Sci. & technol., med.	47.1%	5.9%	29.4%	11.8%	5.9%	100.0%	34
<b>Library user status</b>	Student	55.0%	6.3%	32.4%	5.4%	0.9%	100.0%	111
	Academic	45.0%	10.0%	37.0%	6.0%	2.0%	100.0%	100
	Librarian	61.2%	2.0%	24.5%	12.2%	0.0%	100.0%	49
<b>OPAC searching location</b>	Library	60.4%	5.7%	24.5%	3.8%	5.7%	100.0%	53
	Home, office, etc	46.6%	8.6%	35.1%	8.0%	1.7%	100.0%	174

<sup>2</sup> Respondents who did not say they had never used card catalogues (question 9)

<b>Table C-29</b> <b>OPAC features missed greatly when using CIPACs (Q12)</b>		browsing of different indexes	searching keywords / full text	searching w. Boolean operators	displ. short title list	diff. display formats	building & combining result sets	displaying the search history	displaying the loan status	orders, re- servations, loan ext.	displaying the borr. status	other	none missed greatly	Total Percent	No. of cases
<b>Total</b>	<b>All respondents</b>	41.6%	52.8%	25.0%	25.9%	8.1%	17.2%	7.5%	40.3%	37.5%	24.7%	2.8%	22.8%	306.3%	320
<b>Type of CIPAC</b>	Type "A"	37.4%	60.1%	30.1%	31.3%	10.4%	20.2%	8.6%	46.6%	44.2%	30.7%	3.1%	16.0%	338.7%	163
	Type "B"	46.0%	50.6%	24.1%	34.5%	6.9%	18.4%	10.3%	41.4%	34.5%	25.3%	3.4%	20.7%	316.1%	87
	Type "C"	45.7%	38.6%	14.3%	2.9%	4.3%	8.6%	1.4%	24.3%	25.7%	10.0%	1.4%	41.4%	218.6%	70
<b>Index of CIPAC expertise</b>	High	37.1%	64.9%	35.1%	23.7%	12.4%	25.8%	10.3%	44.3%	41.2%	26.8%	4.1%	14.4%	340.2%	97
	Medium	45.3%	51.6%	23.3%	28.9%	5.0%	15.1%	5.7%	40.3%	35.2%	22.0%	2.5%	22.6%	297.5%	159
	Low	39.1%	37.5%	14.1%	21.9%	9.4%	9.4%	7.8%	34.4%	37.5%	28.1%	1.6%	35.9%	276.6%	64
<b>Main subject area</b>	Humanities, arts	45.8%	59.8%	25.2%	29.9%	9.8%	19.6%	6.5%	44.9%	41.1%	26.6%	2.8%	17.3%	329.4%	214
	Social sci., econ., law	42.6%	53.2%	34.0%	34.0%	10.6%	21.3%	17.0%	51.1%	44.7%	27.7%	0.0%	10.6%	346.8%	47
	Sci. & technol., med.	32.4%	41.2%	26.5%	8.8%	0.0%	8.8%	5.9%	26.5%	29.4%	23.5%	5.9%	32.4%	241.2%	34
<b>Library user status</b>	Student	52.3%	62.2%	24.3%	29.7%	9.9%	17.1%	9.0%	48.6%	49.5%	36.0%	1.8%	14.4%	355.0%	111
	Academic	35.0%	55.0%	31.0%	27.0%	8.0%	25.0%	7.0%	45.0%	37.0%	21.0%	3.0%	15.0%	309.0%	100
	Librarian	51.0%	55.1%	28.6%	30.6%	4.1%	16.3%	8.2%	28.6%	24.5%	12.2%	4.1%	24.5%	287.8%	49
<b>OPAC searching location</b>	Library	41.5%	41.5%	13.2%	18.9%	7.5%	11.3%	7.5%	43.4%	34.0%	24.5%	1.9%	28.3%	273.6%	53
	Home, office, etc	43.7%	57.5%	28.7%	28.2%	8.6%	17.8%	5.7%	42.0%	39.7%	26.4%	1.7%	14.4%	314.4%	174

<b>Table C-30</b> <b>Awareness of other CIPACs (Q13)</b>		yes	no	Total Percent	No. of cases
<b>Total</b>	<b>All respondents</b>	45.6%	54.4%	100.0%	320
<b>Type of CIPAC</b>	Type "A"	57.1%	42.9%	100.0%	163
	Type "B"	27.6%	72.4%	100.0%	87
	Type "C"	41.4%	58.6%	100.0%	70
<b>Index of CIPAC expertise</b>	High	58.8%	41.2%	100.0%	97
	Medium	43.4%	56.6%	100.0%	159
	Low	31.3%	68.8%	100.0%	64
<b>Main subject area</b>	Humanities, arts	52.3%	47.7%	100.0%	214
	Social sci., econ., law	31.9%	68.1%	100.0%	47
	Sci. & technol., med.	41.2%	58.8%	100.0%	34
<b>Library user status</b>	Student	44.1%	55.9%	100.0%	111
	Academic	59.0%	41.0%	100.0%	100
	Librarian	42.9%	57.1%	100.0%	49
<b>OPAC searching location</b>	Library	43.4%	56.6%	100.0%	53
	Home, office, etc	51.7%	48.3%	100.0%	174

<b>Table C-31</b> <b>Frequency of use of other CIPACs (Q14)</b>		very frequently	often	every now and again	rarely	not at all	no answer	Total Percent	No. of cases
<b>Total</b>	<b>Filtered<sup>3</sup></b>	26.7%	34.9%	20.5%	10.3%	5.5%	2.1%	100.0%	146
<b>Type of CIPAC</b>	Type "A"	33.3%	36.6%	18.3%	5.4%	5.4%	1.1%	100.0%	93
	Type "B"	8.3%	29.2%	33.3%	20.8%	8.3%	0.0%	100.0%	24
	Type "C"	20.7%	34.5%	17.2%	17.2%	3.4%	6.9%	100.0%	29
<b>Index of CIPAC expertise</b>	High	38.6%	38.6%	8.8%	10.5%	3.5%	0.0%	100.0%	57
	Medium	20.3%	40.6%	23.2%	7.2%	5.8%	2.9%	100.0%	69
	Low	15.0%	5.0%	45.0%	20.0%	10.0%	5.0%	100.0%	20
<b>Main subject area</b>	Humanities, arts	25.0%	38.4%	21.4%	9.8%	3.6%	1.8%	100.0%	112
	Social sci., econ., law	46.7%	13.3%	20.0%	13.3%	6.7%	0.0%	100.0%	15
	Sci. & technol., med.	28.6%	35.7%	7.1%	14.3%	14.3%	0.0%	100.0%	14
<b>Library user status</b>	Student	22.4%	32.7%	24.5%	16.3%	4.1%	0.0%	100.0%	49
	Academic	33.9%	40.7%	13.6%	6.8%	3.4%	1.7%	100.0%	59
	Librarian	14.3%	33.3%	19.0%	9.5%	19.0%	4.8%	100.0%	21
<b>OPAC searching location</b>	Library	21.7%	43.5%	17.4%	8.7%	4.3%	4.3%	100.0%	23
	Home, office, etc	30.0%	36.7%	16.7%	11.1%	4.4%	1.1%	100.0%	90

<sup>3</sup> Respondents who said they also knew of other CIPACs (question 13)

Table C-32a Comparing "this library's" CIPAC with other CIPACs (Q15)		user-friendly search interface			efficiency of searching			speed of searching, performance			Total Percent	No. of cases
		prefer this CIPAC	prefer other CIPAC	neutral, don't know, no answer	prefer this CIPAC	prefer other CIPAC	neutral, don't know, no answer	prefer this CIPAC	prefer other CIPAC	neutral, don't know, no answer		
Total	Filtered <sup>4</sup>	21.2%	14.4%	64.4%	17.8%	16.4%	65.8%	17.8%	16.4%	65.8%	100.0%	146
Type of CIPAC	Type "A"	14.0%	8.6%	77.4%	12.9%	10.8%	76.3%	11.8%	12.9%	75.3%	100.0%	93
	Type "B"	45.8%	12.5%	41.7%	33.3%	16.7%	50.0%	50.0%	8.3%	41.7%	100.0%	24
	Type "C"	24.1%	34.5%	41.4%	20.7%	34.5%	44.8%	10.3%	34.5%	55.2%	100.0%	29
Index of CIPAC expertise	High	17.5%	12.3%	70.2%	19.3%	5.3%	75.4%	12.3%	14.0%	73.7%	100.0%	57
	Medium	26.1%	15.9%	58.0%	15.9%	23.2%	60.9%	18.8%	20.3%	60.9%	100.0%	69
	Low	15.0%	15.0%	70.0%	20.0%	25.0%	55.0%	30.0%	10.0%	60.0%	100.0%	20
Main subject area	Humanities, arts	19.6%	13.4%	67.0%	17.9%	16.1%	66.1%	18.8%	15.2%	66.1%	100.0%	112
	Social sci., econ., law	33.3%	6.7%	60.0%	20.0%	20.0%	60.0%	20.0%	20.0%	60.0%	100.0%	15
	Sci. & technol., med.	14.3%	35.7%	50.0%	7.1%	21.4%	71.4%	7.1%	28.6%	64.3%	100.0%	14
Library user status	Student	20.4%	8.2%	71.4%	20.4%	18.4%	61.2%	24.5%	18.4%	57.1%	100.0%	49
	Academic	18.6%	18.6%	62.7%	13.6%	15.3%	71.2%	11.9%	18.6%	69.5%	100.0%	59
	Librarian	33.3%	19.0%	47.6%	28.6%	19.0%	52.4%	19.0%	14.3%	66.7%	100.0%	21
OPAC searching location	Library	26.1%	4.3%	69.6%	17.4%	8.7%	73.9%	17.4%	8.7%	73.9%	100.0%	23
	Home, office, etc	17.8%	16.7%	65.6%	16.7%	20.0%	63.3%	14.4%	17.8%	67.8%	100.0%	90

Table C-32b Comparing "this library's" CIPAC with other CIPACs (Q15 contd)		ease of browsing / navigating			quality / legibility of images			availability / quality of online help			Total Percent	No. of cases
		prefer this CIPAC	prefer other CIPAC	neutral, don't know, no answer	prefer this CIPAC	prefer other CIPAC	neutral, don't know, no answer	prefer this CIPAC	prefer other CIPAC	neutral, don't know, no answer		
Total	Filtered <sup>4</sup>	19.2%	13.0%	67.8%	21.2%	12.3%	66.4%	10.3%	4.1%	85.6%	100.0%	146
Type of CIPAC	Type "A"	11.8%	9.7%	78.5%	18.3%	11.8%	69.9%	7.5%	2.2%	90.3%	100.0%	93
	Type "B"	45.8%	12.5%	41.7%	37.5%	8.3%	54.2%	16.7%	8.3%	75.0%	100.0%	24
	Type "C"	20.7%	24.1%	55.2%	17.2%	17.2%	65.5%	13.8%	6.9%	79.3%	100.0%	29
Index of CIPAC expertise	High	15.8%	8.8%	75.4%	19.3%	14.0%	66.7%	14.0%	1.8%	84.2%	100.0%	57
	Medium	21.7%	13.0%	65.2%	23.2%	13.0%	63.8%	10.1%	7.2%	82.6%	100.0%	69
	Low	20.0%	25.0%	55.0%	20.0%	5.0%	75.0%	0.0%	0.0%	100.0%	100.0%	20
Main subject area	Humanities, arts	18.8%	11.6%	69.6%	24.1%	10.7%	65.2%	12.5%	5.4%	82.1%	100.0%	112
	Social sci., econ., law	26.7%	13.3%	60.0%	0.0%	20.0%	80.0%	6.7%	0.0%	93.3%	100.0%	15
	Sci. & technol., med.	14.3%	28.6%	57.1%	14.3%	7.1%	78.6%	0.0%	0.0%	100.0%	100.0%	14
Library user status	Student	22.4%	6.1%	71.4%	22.4%	10.2%	67.3%	12.2%	6.1%	81.6%	100.0%	49
	Academic	15.3%	15.3%	69.5%	20.3%	13.6%	66.1%	11.9%	5.1%	83.1%	100.0%	59
	Librarian	23.8%	19.0%	57.1%	23.8%	14.3%	61.9%	9.5%	0.0%	90.5%	100.0%	21
OPAC searching location	Library	21.7%	0.0%	78.3%	17.4%	8.7%	73.9%	8.7%	0.0%	91.3%	100.0%	23
	Home, office, etc	17.8%	15.6%	66.7%	21.1%	7.8%	71.1%	7.8%	3.3%	88.9%	100.0%	90

<sup>4</sup> Respondents who said they also knew of other CIPACs (question 13)



<b>Table C-33</b> <b>Awareness of features of other CIPACs (Q16)</b>			yes	no / no answer	Total Percent	No. of cases
<b>Total</b>	<b>Filtered<sup>5</sup></b>		19.2%	80.8%	100.0%	146
Type of CIPAC	Type "A"		20.4%	79.6%	100.0%	93
	Type "B"		25.0%	75.0%	100.0%	24
	Type "C"		10.3%	89.7%	100.0%	29
Index of CIPAC expertise	High		19.3%	80.7%	100.0%	57
	Medium		21.7%	78.3%	100.0%	69
	Low		10.0%	90.0%	100.0%	20
Main subject area	Humanities, arts		19.6%	80.4%	100.0%	112
	Social sci., econ., law		26.7%	73.3%	100.0%	15
	Sci. & technol., med.		14.3%	85.7%	100.0%	14
Library user status	Student		20.4%	79.6%	100.0%	49
	Academic		22.0%	78.0%	100.0%	59
	Librarian		14.3%	85.7%	100.0%	21
OPAC searching location	Library		13.0%	87.0%	100.0%	23
	Home, office, etc		21.1%	78.9%	100.0%	90

<b>Table C-34</b> <b>Awareness of features for subject searching (Q17)</b>			yes	no	don't know	Total Percent	No. of cases
<b>Total</b>	<b>All respondents<sup>6</sup></b>		40.0%	15.1%	44.9%	100.0%	305
Type of CIPAC	Type "A"		55.8%	9.2%	35.0%	100.0%	163
	Type "B"		33.3%	25.0%	41.7%	100.0%	72
	Type "C"		10.0%	18.6%	71.4%	100.0%	70
Index of CIPAC expertise	High		52.1%	19.8%	28.1%	100.0%	96
	Medium		43.6%	13.4%	43.0%	100.0%	149
	Low		11.7%	11.7%	76.7%	100.0%	60
Main subject area	Humanities, arts		44.9%	14.6%	40.5%	100.0%	205
	Social sci., econ., law		40.9%	13.6%	45.5%	100.0%	44
	Sci. & technol., med.		33.3%	24.2%	42.4%	100.0%	33
Library user status	Student		39.6%	12.3%	48.1%	100.0%	106
	Academic		52.6%	10.3%	37.1%	100.0%	97
	Librarian		34.0%	38.3%	27.7%	100.0%	47
OPAC searching location	Library		41.2%	21.6%	37.3%	100.0%	51
	Home, office, etc		43.3%	14.6%	42.1%	100.0%	171

<b>Table C-35</b> <b>Options for subject searching (Q17 contd)</b>			title index	subject headings catalogue	classified catalogue	keyword index	other	no answer	Total Percent	No. of cases
<b>Total</b>	<b>Filtered<sup>7</sup></b>		9.8%	82.0%	7.4%	6.6%	4.1%	3.3%	113.1%	122
Type of CIPAC	Type "A"		3.3%	96.7%	7.7%	1.1%	1.1%	1.1%	111.0%	91
	Type "B"		29.2%	41.7%	4.2%	12.5%	16.7%	8.3%	112.5%	24
	Type "C"		28.6%	28.6%	14.3%	57.1%	0.0%	14.3%	142.9%	7
Index of CIPAC expertise	High		6.0%	90.0%	8.0%	6.0%	4.0%	0.0%	114.0%	50
	Medium		13.8%	75.4%	7.7%	6.2%	4.6%	4.6%	112.3%	65
	Low		0.0%	85.7%	0.0%	14.3%	0.0%	14.3%	114.3%	7
Main subject area	Humanities, arts		9.8%	82.6%	7.6%	5.4%	5.4%	3.3%	114.1%	92
	Social sci., econ., law		5.6%	83.3%	5.6%	5.6%	0.0%	5.6%	105.6%	18
	Sci. & technol., med.		9.1%	81.8%	9.1%	18.2%	0.0%	0.0%	118.2%	11
Library user status	Student		7.1%	88.1%	4.8%	2.4%	2.4%	0.0%	104.8%	42
	Academic		7.8%	78.4%	5.9%	7.8%	5.9%	5.9%	111.8%	51
	Librarian		12.5%	81.3%	12.5%	0.0%	6.3%	0.0%	112.5%	16
OPAC searching location	Library		14.3%	76.2%	0.0%	4.8%	0.0%	9.5%	104.8%	21
	Home, office, etc		8.1%	85.1%	8.1%	6.8%	5.4%	2.7%	116.2%	74

<sup>5</sup> Respondents who said they also knew of other CIPACs

<sup>6</sup> Except those from FUB (question not asked)

<sup>7</sup> Respondents aware of features for subject searching (question 17)



<b>Table C-36</b> Frequency of use of features for subject searching (Q18)		very frequently	often	every now and again	rarely	not at all	no answer	Total Percent	No. of cases
Total	Filtered <sup>a</sup>	19.7%	25.4%	26.2%	16.4%	11.5%	0.8%	100.0%	122
Type of CIPAC	Type "A"	22.0%	28.6%	24.2%	16.5%	7.7%	1.1%	100.0%	91
	Type "B"	8.3%	12.5%	33.3%	20.8%	25.0%	0.0%	100.0%	24
	Type "C"	28.6%	28.6%	28.6%	0.0%	14.3%	0.0%	100.0%	7
Index of CIPAC expertise	High	36.0%	28.0%	18.0%	12.0%	4.0%	2.0%	100.0%	50
	Medium	7.7%	23.1%	33.8%	21.5%	13.8%	0.0%	100.0%	65
	Low	14.3%	28.6%	14.3%	0.0%	42.9%	0.0%	100.0%	7
Main subject area	Humanities, arts	18.5%	26.1%	28.3%	17.4%	9.8%	0.0%	100.0%	92
	Social sci., econ., law	22.2%	16.7%	22.2%	11.1%	27.8%	0.0%	100.0%	18
	Sci. & technol., med.	27.3%	36.4%	18.2%	18.2%	0.0%	0.0%	100.0%	11
Library user status	Student	14.3%	38.1%	31.0%	11.9%	4.8%	0.0%	100.0%	42
	Academic	23.5%	27.5%	21.6%	17.6%	9.8%	0.0%	100.0%	51
	Librarian	12.5%	6.3%	25.0%	25.0%	31.3%	0.0%	100.0%	16
OPAC searching location	Library	4.8%	42.9%	33.3%	4.8%	14.3%	0.0%	100.0%	21
	Home, office, etc	21.6%	23.0%	21.6%	21.6%	12.2%	0.0%	100.0%	74

<b>Table C-37</b> Positive experiences with subject searching (Q19)		fast, efficient, straight-forward	unexp. hits (serendipity)	general advantages of CIPACs	various adv. of universal access via www	other	no answer	Total Percent	No. of cases
Total	Filtered <sup>a</sup>	8.0%	6.6%	4.4%	3.6%	2.2%	76.6%	101.5%	137
Type of CIPAC	Type "A"	11.0%	8.8%	5.5%	3.3%	2.2%	70.3%	101.1%	91
	Type "B"	2.6%	2.6%	2.6%	5.1%	2.6%	87.2%	102.6%	39
	Type "C"	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	7
Index of CIPAC expertise	High	13.7%	7.8%	9.8%	5.9%	2.0%	62.7%	102.0%	51
	Medium	5.3%	6.7%	1.3%	2.7%	2.7%	82.7%	101.3%	75
	Low	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	11
Main subject area	Humanities, arts	8.9%	6.9%	5.9%	4.0%	0.0%	76.2%	102.0%	101
	Social sci., econ., law	9.5%	4.8%	0.0%	4.8%	14.3%	66.7%	100.0%	21
	Sci. & technol., med.	0.0%	8.3%	0.0%	0.0%	0.0%	91.7%	100.0%	12
Library user status	Student	4.3%	10.6%	2.1%	4.3%	2.1%	78.7%	102.1%	47
	Academic	13.0%	7.4%	9.3%	5.6%	1.9%	64.8%	101.9%	54
	Librarian	5.6%	0.0%	0.0%	0.0%	0.0%	94.4%	100.0%	18
OPAC searching location	Library	4.3%	0.0%	0.0%	4.3%	8.7%	82.6%	100.0%	23
	Home, office, etc	10.4%	9.1%	3.9%	3.9%	1.3%	74.0%	102.6%	77

<b>Table C-38</b> Negative experiences with subject searching (Q19)		inadequate subject headings	lack of orientation (SH, recall)	call nos. illegible, half-empty cards	navigation arduous, time-consuming	only limited search options	incomplete coverage of catalogue	system too slow	other	no answer	Total Percent	No. of cases
Total	Filtered <sup>a</sup>	5.8%	7.3%	10.2%	15.3%	3.6%	1.5%	3.6%	3.6%	59.9%	110.9%	137
Type of CIPAC	Type "A"	6.6%	11.0%	12.1%	20.9%	3.3%	0.0%	3.3%	3.3%	52.7%	113.2%	91
	Type "B"	5.1%	0.0%	7.7%	5.1%	5.1%	5.1%	5.1%	5.1%	69.2%	107.7%	39
	Type "C"	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%	7
Index of CIPAC expertise	High	9.8%	7.8%	15.7%	23.5%	0.0%	2.0%	5.9%	5.9%	47.1%	117.6%	51
	Medium	4.0%	5.3%	8.0%	12.0%	6.7%	1.3%	2.7%	2.7%	65.3%	108.0%	75
	Low	0.0%	18.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	81.8%	100.0%	11
Main subject area	Humanities, arts	6.9%	5.9%	11.9%	16.8%	4.0%	1.0%	5.0%	3.0%	58.4%	112.9%	101
	Social sci., econ., law	4.8%	14.3%	4.8%	4.8%	4.8%	4.8%	0.0%	9.5%	57.1%	104.8%	21
	Sci. & technol., med.	0.0%	8.3%	8.3%	25.0%	0.0%	0.0%	0.0%	0.0%	66.7%	108.3%	12
Library user status	Student	6.4%	14.9%	4.3%	14.9%	6.4%	0.0%	4.3%	4.3%	55.3%	110.6%	47
	Academic	5.6%	3.7%	18.5%	22.2%	1.9%	1.9%	3.7%	3.7%	55.6%	116.7%	54
	Librarian	11.1%	5.6%	5.6%	0.0%	5.6%	0.0%	5.6%	5.6%	66.7%	105.6%	18
OPAC searching location	Library	4.3%	13.0%	4.3%	13.0%	4.3%	4.3%	4.3%	0.0%	65.2%	113.0%	23
	Home, office, etc	7.8%	6.5%	13.0%	13.0%	3.9%	1.3%	3.9%	3.9%	58.4%	111.7%	77

<sup>a</sup> Respondents aware of features for subject searching (question 17)

<b>Table C-39</b> <b>Awareness of interface to circulation/loan system (Q20)</b>		<b>yes</b>	<b>no</b>	<b>don't know</b>	<b>Total Percent</b>	<b>No. of cases</b>
<b>Total</b>	<b>All respondents<sup>9</sup></b>	38.2%	17.4%	44.5%	100.0%	317
<b>Type of CIPAC</b>	Type "A"	34.4%	25.2%	40.5%	100.0%	163
	Type "B"	58.3%	7.1%	34.5%	100.0%	84
	Type "C"	22.9%	11.4%	65.7%	100.0%	70
<b>Index of CIPAC expertise</b>	High	49.5%	23.7%	26.8%	100.0%	97
	Medium	40.8%	17.2%	42.0%	100.0%	157
	Low	14.3%	7.9%	77.8%	100.0%	63
<b>Main subject area</b>	Humanities, arts	43.0%	17.8%	39.3%	100.0%	214
	Social sci., econ., law	31.9%	21.3%	46.8%	100.0%	47
	Sci. & technol., med.	35.3%	20.6%	44.1%	100.0%	34
<b>Library user status</b>	Student	36.9%	16.2%	46.8%	100.0%	111
	Academic	49.0%	21.0%	30.0%	100.0%	100
	Librarian	40.8%	18.4%	40.8%	100.0%	49
<b>OPAC searching location</b>	Library	32.1%	20.8%	47.2%	100.0%	53
	Home, office, etc	42.5%	19.5%	37.9%	100.0%	174

<b>Table C-40</b> <b>Perceived interface to circulation/loan system (Q20 contd)</b>		<b>form for ord. books, reservations</b>	<b>display of loan information</b>	<b>link to automated circ. syst.</b>	<b>other</b>	<b>no answer</b>	<b>Total Percent</b>	<b>No. of cases</b>
<b>Total</b>	<b>Filtered<sup>10</sup></b>	71.1%	7.4%	27.3%	9.1%	5.0%	119.8%	121
<b>Type of CIPAC</b>	Type "A"	78.6%	5.4%	19.6%	10.7%	3.6%	117.9%	56
	Type "B"	57.1%	4.1%	40.8%	8.2%	6.1%	116.3%	49
	Type "C"	87.5%	25.0%	12.5%	6.3%	6.3%	137.5%	16
<b>Index of CIPAC expertise</b>	High	75.0%	2.1%	25.0%	12.5%	2.1%	116.7%	48
	Medium	65.6%	9.4%	31.3%	7.8%	6.3%	120.3%	64
	Low	88.9%	22.2%	11.1%	0.0%	11.1%	133.3%	9
<b>Main subject area</b>	Humanities, arts	72.8%	5.4%	29.3%	7.6%	5.4%	120.7%	92
	Social sci., econ., law	46.7%	13.3%	26.7%	26.7%	0.0%	113.3%	15
	Sci. & technol., med.	83.3%	16.7%	8.3%	0.0%	8.3%	116.7%	12
<b>Library user status</b>	Student	68.3%	12.2%	39.0%	12.2%	0.0%	131.7%	41
	Academic	77.6%	2.0%	20.4%	6.1%	4.1%	110.2%	49
	Librarian	65.0%	5.0%	25.0%	15.0%	10.0%	120.0%	20
<b>OPAC searching location</b>	Library	64.7%	5.9%	41.2%	5.9%	5.9%	123.5%	17
	Home, office, etc	71.6%	6.8%	24.3%	9.5%	4.1%	116.2%	74

<b>Table C-41</b> <b>Frequency of use of features for circulation/loan (Q21)</b>		<b>very frequently</b>	<b>often</b>	<b>every now and again</b>	<b>rarely</b>	<b>not at all</b>	<b>no answer</b>	<b>Total Percent</b>	<b>No. of cases</b>
<b>Total</b>	<b>Filtered<sup>9</sup></b>	23.1%	24.8%	29.8%	10.7%	10.7%	0.8%	100.0%	121
<b>Type of CIPAC</b>	Type "A"	32.1%	26.8%	25.0%	7.1%	8.9%	0.0%	100.0%	56
	Type "B"	16.3%	26.5%	32.7%	8.2%	14.3%	2.0%	100.0%	49
	Type "C"	12.5%	12.5%	37.5%	31.3%	6.3%	0.0%	100.0%	16
<b>Index of CIPAC expertise</b>	High	43.8%	31.3%	16.7%	6.3%	2.1%	0.0%	100.0%	48
	Medium	10.9%	20.3%	40.6%	12.5%	14.1%	1.6%	100.0%	64
	Low	0.0%	22.2%	22.2%	22.2%	33.3%	0.0%	100.0%	9
<b>Main subject area</b>	Humanities, arts	25.0%	25.0%	32.6%	9.8%	7.6%	0.0%	100.0%	92
	Social sci., econ., law	33.3%	20.0%	20.0%	13.3%	6.7%	6.7%	100.0%	15
	Sci. & technol., med.	0.0%	25.0%	16.7%	16.7%	41.7%	0.0%	100.0%	12
<b>Library user status</b>	Student	19.5%	24.4%	29.3%	12.2%	14.6%	0.0%	100.0%	41
	Academic	30.6%	24.5%	28.6%	8.2%	6.1%	2.0%	100.0%	49
	Librarian	20.0%	20.0%	30.0%	15.0%	15.0%	0.0%	100.0%	20
<b>OPAC searching location</b>	Library	5.9%	23.5%	52.9%	5.9%	11.8%	0.0%	100.0%	17
	Home, office, etc	27.0%	24.3%	27.0%	9.5%	10.8%	1.4%	100.0%	74

<sup>9</sup> Except those from ZLB (question not asked)<sup>10</sup> Respondents aware of an interface to the circulation/loan system (question 20)

<b>Table C-42</b> <b>Rating of circ./loan features (Q22)</b>		<b>very adequate</b>	<b>somewhat adequate</b>	<b>only slightly adequate</b>	<b>not adequate at all</b>	<b>no answer</b>	<b>Total Percent</b>	<b>No. of cases</b>
<b>Total</b>	<b>Filtered<sup>11</sup></b>	23.1%	52.9%	17.4%	1.7%	5.0%	100.0%	121
<b>Type of CIPAC</b>	Type "A"	28.6%	53.6%	14.3%	1.8%	1.8%	100.0%	56
	Type "B"	16.3%	57.1%	18.4%	2.0%	6.1%	100.0%	49
	Type "C"	25.0%	37.5%	25.0%	0.0%	12.5%	100.0%	16
<b>Index of CIPAC expertise</b>	High	39.6%	45.8%	12.5%	0.0%	2.1%	100.0%	48
	Medium	14.1%	59.4%	18.8%	3.1%	4.7%	100.0%	64
	Low	0.0%	44.4%	33.3%	0.0%	22.2%	100.0%	9
<b>Main subject area</b>	Humanities, arts	23.9%	52.2%	18.5%	2.2%	3.3%	100.0%	92
	Social sci., econ., law	20.0%	46.7%	26.7%	0.0%	6.7%	100.0%	15
	Sci. & technol., med.	16.7%	66.7%	0.0%	0.0%	16.7%	100.0%	12
<b>Library user status</b>	Student	17.1%	48.8%	29.3%	2.4%	2.4%	100.0%	41
	Academic	26.5%	55.1%	10.2%	2.0%	6.1%	100.0%	49
	Librarian	30.0%	55.0%	10.0%	0.0%	5.0%	100.0%	20
<b>OPAC searching location</b>	Library	35.3%	41.2%	17.6%	0.0%	5.9%	100.0%	17
	Home, office, etc	24.3%	56.8%	12.2%	2.7%	4.1%	100.0%	74

<b>Table C-43</b> <b>Perceived importance of features for circulation/loan (Q23)</b>		<b>yes</b>	<b>no</b>	<b>no answer</b>	<b>Total Percent</b>	<b>No. of cases</b>
<b>Total</b>	<b>All respondents<sup>12</sup></b>	74.4%	10.1%	15.5%	100.0%	317
<b>Type of CIPAC</b>	Type "A"	76.1%	10.4%	13.5%	100.0%	163
	Type "B"	71.4%	11.9%	16.7%	100.0%	84
	Type "C"	74.3%	7.1%	18.6%	100.0%	70
<b>Index of CIPAC expertise</b>	High	82.5%	10.3%	7.2%	100.0%	97
	Medium	73.2%	12.1%	14.6%	100.0%	157
	Low	65.1%	4.8%	30.2%	100.0%	63
<b>Main subject area</b>	Humanities, arts	81.3%	9.8%	8.9%	100.0%	214
	Social sci., econ., law	74.5%	12.8%	12.8%	100.0%	47
	Sci. & technol., med.	70.6%	14.7%	14.7%	100.0%	34
<b>Library user status</b>	Student	80.2%	11.7%	8.1%	100.0%	111
	Academic	76.0%	9.0%	15.0%	100.0%	100
	Librarian	81.6%	14.3%	4.1%	100.0%	49
<b>OPAC searching location</b>	Library	75.5%	11.3%	13.2%	100.0%	53
	Home, office, etc	79.9%	10.3%	9.8%	100.0%	174

<b>Table C-44</b> <b>Emotional rating of "this library's" CIPAC(s) (Q24)</b>		<b>system is convenient to use</b>		<b>system is rather old-fashioned</b>		<b>I am totally happy with this system</b>		<b>this system suits the library well</b>		<b>should be replaced by something else</b>	
1=strongly agree, 5=strongly disagree		<b>Mean</b>	<b>Std dev</b>	<b>Mean</b>	<b>Std dev</b>	<b>Mean</b>	<b>Std dev</b>	<b>Mean</b>	<b>Std dev</b>	<b>Mean</b>	<b>Std dev</b>
<b>Total</b>	<b>All respondents</b>	2.32	1.02	3.28	1.23	2.53	1.10	2.46	1.10	2.86	1.33
<b>Type of CIPAC</b>	Type "A"	2.48	1.09	3.01	1.29	2.61	1.19	2.67	1.24	2.56	1.40
	Type "B"	2.12	0.85	3.62	1.08	2.26	1.02	2.27	0.91	3.27	1.33
	Type "C"	2.15	0.98	3.55	1.05	2.75	0.88	2.17	0.83	3.14	0.87
<b>Index of CIPAC expertise</b>	High	2.34	1.12	3.23	1.32	2.45	1.19	2.59	1.23	2.66	1.45
	Medium	2.25	0.94	3.29	1.20	2.46	1.05	2.35	1.08	2.96	1.32
	Low	2.50	1.09	3.36	1.11	2.93	1.02	2.58	0.84	2.98	1.06
<b>Main subject area</b>	Humanities, arts	2.36	1.02	3.18	1.22	2.57	1.14	2.50	1.15	2.77	1.35
	Social sci., econ., law	2.35	1.02	3.57	1.13	2.52	1.07	2.42	0.97	3.09	1.28
	Sci. & technol., med.	2.03	1.03	3.43	1.33	2.34	0.97	2.33	1.06	3.03	1.33
<b>Library user status</b>	Student	2.41	0.91	3.17	1.11	2.70	1.08	2.65	1.14	2.75	1.19
	Academic	2.26	1.13	3.13	1.32	2.42	1.12	2.36	1.18	2.81	1.47
	Librarian	2.28	1.03	3.71	1.15	2.35	1.04	2.28	0.96	3.02	1.32
<b>OPAC searching location</b>	Library	2.26	0.94	3.21	1.09	2.46	0.99	2.53	1.12	2.83	1.35
	Home, office, etc	2.35	1.05	3.36	1.27	2.47	1.10	2.46	1.08	2.90	1.35

<sup>11</sup> Respondents aware of an interface to the circulation/loan system (question 20)

<sup>12</sup> Except those from ZLB (question not asked)

<b>Table C-45</b> <b>Library user status (Q25)</b>		<b>student</b>	<b>academic teacher / res.</b>	<b>librarian</b>	<b>other</b>	<b>no answer</b>	<b>Total Percent</b>	<b>No. of cases</b>
<b>Total</b>	<b>All respondents</b>	34.7%	31.3%	15.3%	11.6%	7.2%	100.0%	320
<b>Type of CIPAC</b>	Type "A"	40.5%	35.0%	8.6%	10.4%	5.5%	100.0%	163
	Type "B"	33.3%	29.9%	20.7%	11.5%	4.6%	100.0%	87
	Type "C"	22.9%	24.3%	24.3%	14.3%	14.3%	100.0%	70
<b>Index of CIPAC expertise</b>	High	37.1%	39.2%	12.4%	9.3%	2.1%	100.0%	97
	Medium	34.6%	32.1%	18.9%	9.4%	5.0%	100.0%	159
	Low	31.3%	17.2%	10.9%	20.3%	20.3%	100.0%	64
<b>Main subject area</b>	Humanities, arts	40.2%	37.9%	11.7%	10.3%	0.0%	100.0%	214
	Social sci., econ., law	38.3%	25.5%	23.4%	12.8%	0.0%	100.0%	47
	Sci. & technol., med.	20.6%	17.6%	32.4%	26.5%	2.9%	100.0%	34
<b>Library user status</b>	Student	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	111
	Academic	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%	100
	Librarian	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%	49
<b>OPAC searching location</b>	Library	41.5%	17.0%	28.3%	11.3%	1.9%	100.0%	53
	Home, office, etc	30.5%	41.4%	16.1%	12.1%	0.0%	100.0%	174

<b>Table C-46</b> <b>Main subject area (Q26)</b>		<b>humanities, arts</b>	<b>social / behavioural sciences</b>	<b>law, econ., business admin.</b>	<b>science, mathematics</b>	<b>eng. , technol., computer science</b>	<b>medicine</b>	<b>no answer</b>	<b>Total Percent</b>	<b>No. of cases</b>
<b>Total</b>	<b>All respondents</b>	66.9%	10.6%	4.1%	5.0%	4.1%	1.6%	7.8%	100.0%	320
<b>Type of CIPAC</b>	Type "A"	72.4%	9.2%	4.3%	6.1%	2.5%	0.6%	4.9%	100.0%	163
	Type "B"	71.3%	9.2%	6.9%	1.1%	2.3%	3.4%	5.7%	100.0%	87
	Type "C"	48.6%	15.7%	0.0%	7.1%	10.0%	1.4%	17.1%	100.0%	70
<b>Index of CIPAC expertise</b>	High	81.4%	6.2%	3.1%	4.1%	2.1%	0.0%	3.1%	100.0%	97
	Medium	67.9%	10.1%	4.4%	5.7%	3.8%	1.9%	6.3%	100.0%	159
	Low	42.2%	18.8%	4.7%	4.7%	7.8%	3.1%	18.8%	100.0%	64
<b>Main subject area</b>	Humanities, arts	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	214
	Social sci., econ., law	0.0%	72.3%	27.7%	0.0%	0.0%	0.0%	0.0%	100.0%	47
	Sci. & technol., med.	0.0%	0.0%	0.0%	47.1%	38.2%	14.7%	0.0%	100.0%	34
<b>Library user status</b>	Student	77.5%	13.5%	2.7%	3.6%	2.7%	0.0%	0.0%	100.0%	111
	Academic	81.0%	6.0%	6.0%	4.0%	2.0%	0.0%	1.0%	100.0%	100
	Librarian	51.0%	20.4%	2.0%	10.2%	6.1%	6.1%	4.1%	100.0%	49
<b>OPAC searching location</b>	Library	66.0%	15.1%	7.5%	1.9%	1.9%	3.8%	3.8%	100.0%	53
	Home, office, etc	72.4%	10.9%	4.0%	6.9%	4.0%	1.1%	0.6%	100.0%	174

<b>Table C-47</b> <b>Location for OPAC searching (Q27)</b>		<b>library</b>	<b>home/ office/other</b>	<b>both (equally)</b>	<b>no answer</b>	<b>Total Percent</b>	<b>No. of cases</b>
<b>Total</b>	<b>All respondents</b>	16.6%	54.4%	21.3%	7.8%	100.0%	320
<b>Type of CIPAC</b>	Type "A"	14.7%	60.1%	20.2%	4.9%	100.0%	163
	Type "B"	21.8%	46.0%	25.3%	6.9%	100.0%	87
	Type "C"	14.3%	51.4%	18.6%	15.7%	100.0%	70
<b>Index of CIPAC expertise</b>	High	16.5%	61.9%	17.5%	4.1%	100.0%	97
	Medium	17.0%	53.5%	24.5%	5.0%	100.0%	159
	Low	15.6%	45.3%	18.8%	20.3%	100.0%	64
<b>Main subject area</b>	Humanities, arts	16.4%	58.9%	23.8%	0.9%	100.0%	214
	Social sci., econ., law	25.5%	55.3%	19.1%	0.0%	100.0%	47
	Sci. & technol., med.	11.8%	61.8%	23.5%	2.9%	100.0%	34
<b>Library user status</b>	Student	19.8%	47.7%	31.5%	0.9%	100.0%	111
	Academic	9.0%	72.0%	17.0%	2.0%	100.0%	100
	Librarian	30.6%	57.1%	12.2%	0.0%	100.0%	49
<b>OPAC searching location</b>	Library	100.0%	0.0%	0.0%	0.0%	100.0%	53
	Home, office, etc	0.0%	100.0%	0.0%	0.0%	100.0%	174